

ATARI ST USER

The
top-selling
Atari ST
magazine

Volume 4
Number 4
June 1989
£1.95

Incorporating
ST
UPDATE

LISTING

Display and convert
IMG pictures to Degas

REVIEWS

Jackpot 2, Jigspell,
Pools System, Virus
Destruction Utility,
Tweety Board, Mini
Office Spreadsheet

FEATURE

How to write and publish
a novel on the Atari ST

GAMES

Archipelago, Pac Land,
Mars Cops, The Deep,
Typhoon Thompson, Mad
Flunky, Circus Games,
Bio Challenge, Running
Man and many more

In this month's pullout:



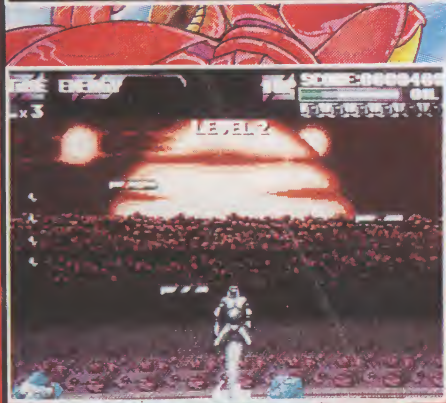
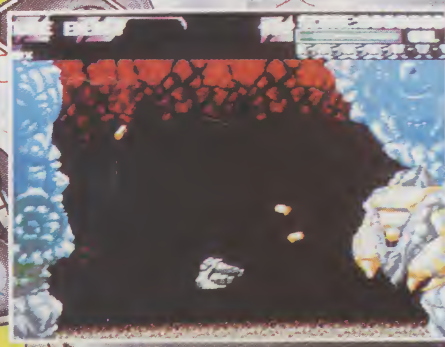
Setting up a database
Using pointers in C
First steps in Midi
Gem window functions



How good
are flight
simulators?

Bio CHALLENGE

For
Atari ST
Amiga



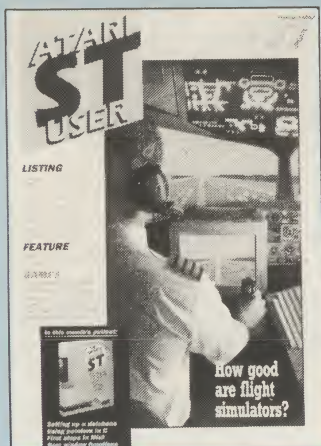
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FEATURES

News

All the latest stories and events from the ever-expanding world of the Atari ST, including the latest Gallup Chart of top-selling games software.

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Midi

Ian Waugh reviews the flexible 4-Op Deluxe and continues his journey through the PD music software scene.

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The Italian Job

Power Computing is an expanding company – we chart its recent growth.

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Up, up and away



Stephen Murgan takes an overview of the multitude of ST flight simulators.

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Arcade Corner

Featuring part one of a series of help for the ever popular space game, Elite.

59

The game creator

David McLachlan continues to look at making the most of STOS, with hints on using the Play command and changing the mouse pointer sprite.

63

A novel idea

John Wade explains how he went about writing and publishing a glossy paperback book on his Atari ST.

77

Gallery

Our worldwide art stage displays a colourful selection of amazing pictures created by 17-year-old Mark James.

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Education

Sean Caley offers a superb type-in Basic listing of a spelling program to train visual recognition and retention.

83

MORE FOR YOUR BINDER ...

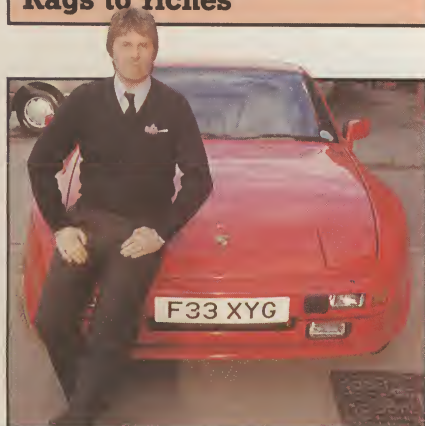
Part 11 of The Complete Atari ST. Over the months this illustrated pull-out, which comes free with *Atari ST User*, is building up into the definitive guide to the working and uses of this powerful micro.

Continuing this month with:

- **More AES window manipulation in ST Gem.**
- **Building up your library of C functions.**
- **A look at database packages for small business use.**
- **Start of a new series on Midi and music on the ST.**



Rags to riches



We report the success of Roger Hulley and his software distribution empire.

91

Brillig

Our resident wizard stays bright to give help to struggling adventurers. Plus a review of Police Quest II.

105

Mailbag

Here's a further selection of the liveliest and most informative letters from our ever-bulging ST mailbag.

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REVIEWS

Software



Archipelagos, Running Man, Pac Land, Mad Flunky, Ballistix, Roy of the Rovers, The Deep, Circus Games, Backgammon, Winter Sports, Battlehawks 1942, Dragonscape and more.

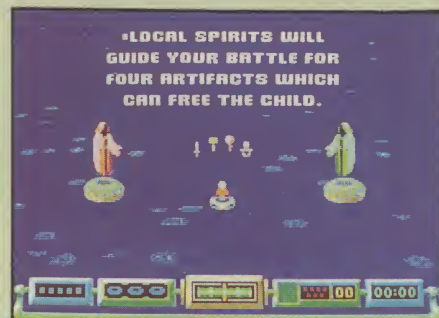
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ATARI STAR USER GAME

Typhoon Thompson

This quirky but compulsive game arrives on the Waddilove testbench and it is found to be a real treasure.

20



Bug beater

Under the microscope: A budget-priced utility which claims to kill off all known ST viruses, stone dead.

49

Two for the price

A grey-scale Multisync monitor for just less than £200 is now a reality.

57

Mini Office Professional

The spreadsheet module from this powerful integrated suite of business packages is put through its paces.

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Jigsawspell

Nic Outterside evaluates this new spelling package which includes some neat personal customise options.

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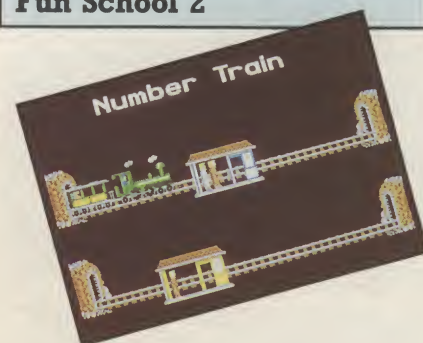
LISTING

Image

Now you can load and manipulate large IMG files with this useful listing.

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Fun School 2



Three brand new educational games compendiums are given an in-depth assessment by expert John Martin.

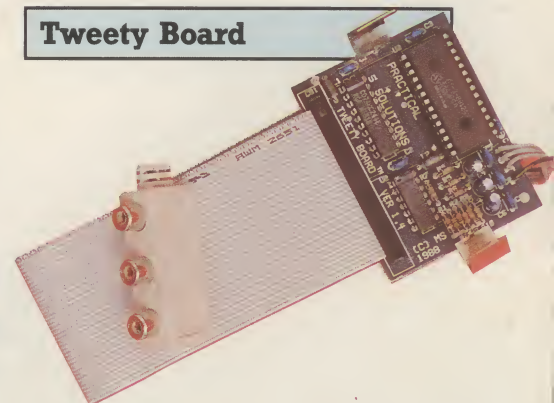
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Winning ways

Ever fancied hitting the jackpot on the football pools? Two prediction programs are tested and compared.

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Tweety Board



A look at a new add-on to allow you to output stereo hi-fi sound from your ST.

115

Be part of the action

at the

ATARI

COMPUTER SHOW

MIDI

All the latest hardware and software in the rapidly expanding scene of micro music will be on display, including keyboards, samplers, sequencers and professional studio software.

With an Atari/Midi setup you can produce top-quality music, quickly and simply – editing out mistakes in a way that's impossible with live recordings. So if you're in any way interested in making music with your micro this is the place to come to find out all about it.

CAD

Computer Aided Design has grown to become one of the most important uses for modern computers. With a CAD system you can design houses, cars and electronic circuits – in a fraction of the time it would take you with pen and paper.

With the high speed and powerful graphics of Atari micros it's hardly surprising that bigger and better CAD programs are pushing back the frontiers all the time.

And only at the Atari Computer Show can you see all the latest systems under one roof.

BUSINESS

Many companies will be demonstrating their latest software and hardware, specially designed to release the full business potential of Atari computers.

As well as products for the 8-bit and ST, you'll be able to try out applications for the powerful Atari PC compatible series.

And you'll also be able to get expert advice from professionals.

DTP

The art of combining text and pictures is big business nowadays because, with a low-cost DTP program, you can create anything from a club newsletter to a monthly magazine or book.

At the show you'll be able to try out the latest scanners, digitisers and super-fast programs, and get a first-hand glimpse at the way DTP is set to develop in the future.

Alexandra Palace, Wood Green,
London N22

Friday to Sunday,

June 23 to 25, 1989

Fri & Sat: 10am – 6pm,

Sun: 10am – 4pm

The Atari Computer Show is back – with many new products and developments. Atari has grown to be one of the major players in the computer world, supported by an incredible wealth of top quality applications, games and utilities – all on view at this show.



GAMES

Atari computers are renowned for their ability to run fast-action arcade-quality games.

The range of new software on show will demonstrate how the power of these machines is continually being stretched, producing faster and even more addictive games with superb graphics.

The winning entry in the STOS Gameswriter of the Year Award will be revealed, and several new exciting STOS accessories will be shown for the first time.

If you're a keen game player, you'll find there's so much on offer at the show – you're guaranteed a real treat!

DON'T MISS IT

So for a great day out – whether you want to see what the future holds for Atari computer users, take advantage of the bargains on offer or get advice on specific applications – the Atari Computer Show is the place to go.

And if you send in the coupon now, you'll save £1 off the price of a single ticket!

SPECIAL OFFER

For the first time we are now offering a family ticket for just £11, allowing entry for two adults and two children. So you can save up to £6 off the usual entry price!

How To Get There

Alexandra Palace is so easy to get to by car, rail, underground or bus. It has its own British Rail station, just nine minutes away from King's Cross, and there's a free bus service shuttling between station and show every 10 minutes.

If you're travelling by road, the show is only 15 minutes away from Junction 25 on the M25. Car parking is free.

DATABASE EXHIBITIONS

ADVANCE TICKET ORDER

POST TO: Atari Computer Show Tickets,
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Please supply:

☐ Adult tickets at £4 (save £1) £

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Euro launch for Atari ST portable

ATARI has put back the UK launch of its ST based portable, the Stacey laptop. Originally promised for April or May, the machine is now being aimed at later in the year. About to be launched in Holland, Stacey has featured there in Atari ST Nieuws.

The size of a normal attaché case closed, it opens to reveal a high resolution monochrome blue grey screen which is reported as being slightly slow on the uptake. Stacey comes with a trackball which is efficient. There is a port to connect a mouse, but reports say the machine will not easily keep up with swift mouse movements.

Next to the screen are a contrast regulator, volume level and inbuilt loud-speaker. A useful small extra is a flap which fits over the trackball when the lid is closed but provides a clip for documents when open.

The alphanumeric keyboard is smaller

than the Atari ST's. Function and cursor keys positioned above the main keyboard are smaller and to the right there is also a small numeric keyboard.

Position of the ports is similar to the ST1040 on which Stacey has been based. On the left hand side of the machine are rom and Midi ports, on the right are disc drive ports and at the back are those for DMA printer, RS232 and disc drive.

Stacey can be run either on batteries or from the mains. Battery life of six to seven hours.

If Dutch prices are converted to Sterling, the base model with 1Mb of memory and two double sided disc drives will cost around £1,000. Middle of the range model with 1Mb of memory, one double sided disc drive and a 20Mb hard disc will be around £1,300 and top of the range with double sided disc drive and 20Mb hard disc with 2Mb of memory will be about £1,600.

ATARI ST USER

takes over the top spot

ATARI ST User now has the largest UK circulation for an ST specific publication quoted by ABC. It took over the top spot after an impressive leap of 18.6 per cent in the latest audited ABC circulation figures.

"The confidence we have in our publications is obviously shared by our advertisers and readers", said advertising manager for Database Publications, John Snowden. "The ABC figures underline the importance of *Atari ST User* in the 16 bit market and we look to the future secure in the belief that this will continue to grow".

The Crossing connection

RESPONSE to Nic Outterside's Atlantic Crossing article in the April issue of *Atari ST User* has been overwhelming, with many readers wanting to know how to get hold of the public domain educational programs it referred to.

These can be obtained from most public domain software libraries including Forest Computer Services (01-508 7714) and Softville PD Service (0705 266509).

Deal brings more games

AN agreement between top software developer Incentive (07356 77288) and publishing house MicroProse (0666 54326) promises to be good news for games players. Signing the agreement is Ian Andrew, MD of Incentive, with Major Bill Stealey, President of MicroProse and MicroProse Publisher Paul Hibbard looking on.

Dark Side and Total Eclipse which have had major success on 8 bit formats are now to be released for the ST following the marketing deal. Both games feature Incentive's freescape 3D graphics. Dark Side and Total Eclipse will cost £24.99.





SK MARKETING

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| | |
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| Atari SC1224 (Colour Monitor) | £310.00 |
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| Cumana 5.25" ST Drive | £149.95 |
| Cumana Dual 3.5" Drive | £229.95 |

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| Micro Peripherals 135+ | £149 |
| Star LC10 Multifont | £207 |
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| Star LC24 10 | £332 |
| Star NB24-10 | £539 |
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| Epson LX800 | £212 |
| Epson LQ500 | £340 |
| Epson LQ850 | £510 |
| Epson LQ1050 | £650 |
| Epson FX850 (New In) | £379 |
| Epson FX1050 (New In) | £478 |
| Citizen 120D | £156 |
| Panasonic 1081 | £167 |
| Panasonic P1180 (New) | £190 |
| NEC P2200 | £340 |
| NEC P6 Plus | £546 |
| NEC P7 Plus | £679 |
| Juki 6100 | £296 |
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| Epson Laser GQ3500 | £1426 |
| Panasonic Laser | £1840 |
| Hewlett Packard Jet II | £1815 |
| Panasonic P1124 (NEW) | £332 |

BOOKS ST

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|---|--------|
| 1001 Things to do with Atari ST | £10.00 |
| 1st Book of Atari ST | £16.95 |
| Atari ST Tricks + Trips | £14.95 |
| Mastering the Atari ST | £10.95 |
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| Atari ST for Beginners | £12.95 |
| Atari ST Users Guide | £15.95 |
| Atari ST Prog. Advanced Guide | £10.95 |
| ST Disks Drives: Inside & Out | £18.95 |
| Presenting the Atari ST Rev. Ed. | £12.95 |
| Technical Reference Guide ST Vol. 1 | £18.95 |

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| Advanced Art Studio | £16.95 | Hisoft Basic | £55.00 |
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John finds the grail

A *LIFELONG* interest in the legend of King Arthur has paid off handsomely for John Sweeney of Nottingham. He is now the proud owner of a £5,000 replica of the Holy Grail – first prize in the national treasure hunt competition devised by Mandarin Software (0625 878888).

Arranged to coincide with the launch of Mandarin's *Lancelot* title based on the legend of King Arthur, the quest started in October last year. John used his Atari ST to find clues which were hidden in *Lancelot*.

Since then contestants have followed increasingly difficult clues to find the hiding place of the grail, an impressive replica gilded with 22 carat gold and encrusted with amethysts, garnets and opals.

Using his specialised knowledge of the legend, it took John 27 hours to solve the final set of mind-bending clues and be first to come up with the hiding place – the Cerne Abbas Giant etched into chalk

in a Dorset hillside.

A systems analyst with IBM in Nottingham, John lives in nearby Clifton with his wife Maggie and sons Mark and Alex. "When I was a child I had a full set of models of Arthur's knights", he said. "I have always been interested in legend and myth and since computer games came out I have also been interested in those."

"This competition gave me the chance to combine the two, but towards the end the clues were very hard and at times obscure".

John used 30 reference books ranging from legends to obscure archeology to crack the quest. Of particular help was his old copy of *Le Morte d'Arthur* containing a glossary not found in modern versions.

● *Lancelot* has recently scooped second prize in the Best Adventure Game section of the Computer Arena Awards.



John Sweeney with his prize

ST running rings round an IBM XT

SOON to be available in the UK is PC-Ditto II, a hardware-based PC emulator which makes the Atari ST run at three times the speed of an IBM XT.

This new utility, developed in America by Avant Garde Systems, has ironed out many of the problems of its predecessor, the software based PC-Ditto, and has added a phenomenal turn of speed.

It will run the most popular IBM software on all Atari ST models with XT compatibility. The Norton SI rating is 3.0 compared to the IBM XT rating of 1.0 and the Zenith EZ-20 rating of 2.6.

Avant-Garde partner William Teal said: "We see PC-Ditto II as a utility that adds value to the Atari and Mega ST."

Many people who purchase the ST for features inherent in it also desire access to that large base of IBM software. Many of our buyers are people that like to take work home but don't want to spend exor-

bitant sums of money on a PC compatible.

"Many of our customers are small businessmen that cannot afford and do not need more expensive computers. Both of these groups require a product that is very compatible, fast and also inexpensive; PC-Ditto II fills that need".

Features of PC-Ditto II include up to 640k usable memory, monochrome and colour graphics, fixed disc adaptor with automatic access to all ST partitions, Microsoft-compatible mouse as well as Avant-Garde's own generic mouse support.

It plugs into the cartridge port, uses custom chips and also features a clock/calendar, full serial and parallel port emulation and support of 3.5inch 80 track and optional 5.25inch 40 track drives.

Sole UK distributor for PC-Ditto II is Power Computing (0234 52207) aiming for a June launch at £199 with free update.

NOW reaching its first birthday is *Official Secrets*, the adventure games club run by Inter-Mediate. A new mini-adventure has been written by Magnetic Scrolls to be included in the £19.95 membership pack of the club. Called *Myth*, it features Poseideon who has been stripped of his godly powers and has to earn his right to eternal life by stealing Hades' helmet.

ST owners who join *Official Secrets* will receive the club magazine, a copy of *Myth*, one other adventure game and access to the adventure help line. Anyone wanting to join *Official Secrets* should ring John Trevillian on 0279 726541.

SOFTWARE HOTLINE



ST games players have a fright in store from Microdeal (0726 68020). The company is releasing *Fright Night*, with gameplay by Steve Bak and graphics from Peter Lyon.

The player takes the role of vampire with just 12 hours of darkness to attack everyone in the rooms of the *Fright-night* house. If he does not succeed, they visit his coffin and stake him out. *Fright Night* costs £19.95.



BREACH, a single player tactical marine combat game, is another new offering for the Atari ST from Artronic (0423 525325). It contains several scenarios and a builder facility so the player can create new scenes or modify existing ones.

Several victory conditions can be merged together to form complex battles in this war game which is the result of links between Artronic and Omnitrend Software. Price £19.99.

Amsterdam launch for UK software

BRITAIN's fastest growing games software house, Mirrorsoft, has held a major European product launch in Amsterdam.

The Mirrorsoft group which parasols Imageworks, Cinemaware, FTL, PSS, Spectrum Holobyte and now Logotron, tempted the European computer press with canal trips, Bols, tulips and more than 20 new releases timetabled for this year.

Imageworks alone has eight new products scheduled for launch between now and Christmas. The first is the fantasy role playing game, Bloodwych (£24.99). July will see the release of graphically stunning Interphase - Edge of Dreamtime. September will be the launch date for shoot-'em-up Crime Town Depths (£24.99) and Terrarium (£24.99).

Other releases will include Palladin - Lord of the Dancing Blades (£24.99), DDT (£24.99), a unique laterally scrolling shoot-'em-up by Tony Crowther entitled Phobia (£24.99) and the next Bitmap Brothers game, Xenon II - Megablast (£24.99).

Cinemaware leads the industry in visual and sound effects and Mirrorsoft now has exclusive rights to distribute the company's new range of products which will include an epic Lords of the Rising Sun (£24.99), a 1950's type Big Bug clone, It Came from the Desert (£24.99) and TV Sports American Football (£24.99) and Basketball (£24.99).

FTL is following up the success of Dungeon Master with a soon to be

released add-on package, Chaos Strikes Back. It is as compulsive as the original with fiendishly complex puzzles which have made Dungeon Master such a classic.

PSS is the largest UK publisher of wargames for home computers. Set for release this month is Waterloo (£24.99), which follows the fortunes of Napoleon and Wellington in much the same manner as Atari's highly successful Borodino.

Due for sequential release is Conflict Europe (£24.99). It is aimed at the novice wargamer and unlike its 8 bit prequel Theatre Europe features the opportunity to avoid conflict and find world peace.

Spectrum Holobyte aims to follow the success of Falcon - voted best simulation of the year on both sides of the Atlantic - with a 12 mission disc to take Falcon into the next generation. The disc will include 11 mission strikes and a complete battle scenario in Mission 12.

Also scheduled for winter release is a sports racing simulation, Vette - from the American car name Corvette.

Newest addition to the Mirrorsoft stable is software producer Logotron. At the launch Logotron Product Manager, Herbie Wright announced forthcoming titles including the excellent Archipelagos (£24.99), Starblaze (£24.99) - scheduled for release this month - and arcade/adventure Eye of Horus.

We will feature a full report of these products and the European Press launch in next month's *Atari ST User*.

Bugs book

ELEVEN new viruses, worms and other malevolent programs are featured in the second edition of *The Complete Computer Virus Handbook* published by management consultant Price Waterhouse.

The Atari ST virus, Larry the Lounge Lizard, Pervading Animal and Rabbit are included with evaluations of the threats they pose and available antidotes.

"Our research into viruses will continue and we are already working on a third edition of the handbook", said computer virus expert David Frost who is a partner in Price Waterhouse. The handbook is available from Price Waterhouse, 1 London Bridge, London SE1 9QL for £15. It is free to purchasers of the first edition.

Take it in a lot faster

SPEED Read Technologies (01-995 9250) has now brought out a package for the ST aimed at doubling reading speed in 20 lessons.

"It has been proved that if you read faster you concentrate more and consequently you absorb more of the material you are reading", said David Crombie of Speed Read Technologies. "The program is designed to monitor the effective reading speed of the pupil and progress is constantly monitored to indicate to the student that he is actually reading faster and remembering more."

"This is not a gimmick of the You too can have a full head of hair variety. This program actually works as it uses proven techniques".

Speed Read costs £29.95.

SOFTWARE HOTLINE



LATEST simulation game from Artronic Products will give Atari ST users the chance to pit their driving skills against some of the most famous racing circuits in the world.

It is the result of a licensing deal between Artronic (0423 525325) and champion sports car team Spice Engineering.

Fast Lane centres around such circuits as Le Mans and Nurburgring with graphics being both technically and visually accurate. The launch is aimed for a week before the Le Mans 24 hour race. Price £19.99.

★ ★ ★

WHITE Panther Publishing (0252 622308) has pounced on the Atari ST market with two new games. Quasar is a fast moving scrolling arcade game which makes full use of the ST graphic and sound capabilities. Price £19.99.

Alpha Max One comes with a novella setting the scene for the return of humans to Earth. This full screen scrolling arcade shoot-'em-up demands intense concentration to avoid alien action. It costs £14.99.



MICROPROSE (0666 54326) has kicked off into 16 bit with the Atari ST version of its 8 bit soccer success. Programmed by The Electronic Pencil Company, MicroProse Soccer features full-screen eight way scrolling as well as any number of players on screen at a time.

Overhead kicks, banana shots, sliding, tackles and varying weather are just some of the detail in this soccer simulation which sells for £24.95.



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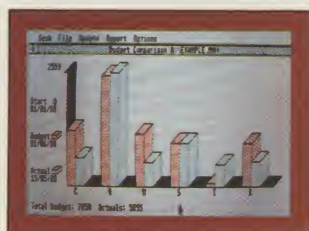
If you're the type that likes to look ahead then PFM allows you to set budgets for both expenditure and income. Up to 10 budgets can be set over a year, a quarter or a month and then displayed either in figures or as a bar graph for a given period. Income/expenditure for these budgets can also be shown as a pie chart so you can tell at a glance where your money's gone. PFM also allows you to display or print your budget groups selectively so you can see your expenditure quickly and easily.

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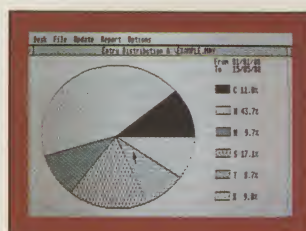
Ron Massey, ST USER

"Personal Finance Manager is a sophisticated home financial package, it will probably help you save money."

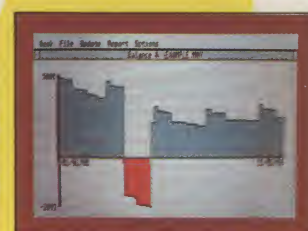
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Rock around with Code Masters

ATARI ST users will have to wait until the autumn for their version of *Rock Star*, the new game from Code Masters (0926 814132). It is a management game with players guiding the career of their chosen pop star ranging from Tina Turnoff and Stiff Pilchard to Michael Gorge. Price will be £19.99.

Brothers Richard and David Darling of Code Masters decided to boost publicity by roping in friends to pose as their own rock group The Hamsters.

Software companies bid to boost games

THE UK's top entertainment software houses have joined forces to wage war on software piracy and boost the popularity of computer games. The Entertainment Software Publishers Association (ESPA) has been formed with many software firms among its initial membership.

Its aim is "radically to change the face of the British home computer industry" which it claims will be in everyone's interest. Main target of ESPA is to improve the popularity of computer games.

"The consequent expansion will be good news for games players because a bigger market means a bigger choice and better products which are more easily available", said ESPA publicity man Michael Baxter.

One way the new association intends to carry out its key aim is through publicising computer games on television and in newspapers.

"The basic aim is to educate people in the television and newspaper world about the games software industry", said Michael Baxter. "This means that it will be easier to persuade parents to buy soft-

ware or hardware as Christmas presents".

Gathering more market information is another target of ESPA. In the past, software houses have each had their own market research budget which uncovered similar results for each company. The association will now use subscription money to obtain a lot more information on what its customers want.

One of the strongest aims of ESPA will be to support FAST, the Federation Against Software Theft, in the fight against software piracy.

Piracy costs the industry millions of pounds which also affects the end users. ESPA and FAST will combine to produce a strong publicity drive aimed at persuading games players to boycott pirated software. It is also hoped to lobby MPs with a view to changes in the law.

The idea for a publishers association was first floated last year at the Computer Arena meeting for the industry in Jersey. It became reality at this year's meeting in Majorca.

Speaking there, Bob Hay, the co-ordinator of FAST, outlined various ways of combating piracy.

Computer Trade Weekly, Database Publications, EMAP, Future Publishing, Gollner and Newsfield, all agreed to run free FAST advertisements.

Initial membership of ESPA includes Alternative Software, Audiogenic, CDS, Database Software, Domark, Elite, Grand Slam, Hewson Consultants, Mirrorsoft, Ocean, Psygnosis and Virgin Mastertronic. Andrew Hewson was appointed interim chairman.

Free disc at the show

MORE than 15,000 visitors are expected at the June Atari Computer Show to see latest developments which have rocketed sales of Atari-related products.

Organised by Database Exhibitions, the show will run at the West Hall, Alexandra Palace, London, from June 23 to 25 and will be of special importance to readers of *Atari ST User*.

Free copies of the July issue will be given out at the door of the show and those who have already bought that issue will have an even better offer.

Subscribers and other readers who take along their July copies will be given a voucher at the door. This will be redeemable against a utility disc on sale at the Database/Mandarin stand. On-sale date of that issue will be brought forward by one week.

Rally on TV

MANCHESTER United footballer, Norman Whiteside has shown millions of television viewers the fun of playing Lombard RAC Rally, the top selling game from Mandarin Software (0625 878888).

Prime time quiz show *A Question of Sport* has featured the game in its viewers quiz. The idea is to guess the identity of mystery sports stars from odd shots of their faces, and while it was being filmed Norman chose to take on the Lombard RAC Rally course in a Ford Sierra Cosworth.

That is the scenario for Rally which was developed for Mandarin by Red Rat Software and truly mirrors the Lombard Rally.

The Atari ST version of Rally costs £24.95.

Network plans

REPORTS from America indicate that Atari is about to make an announcement on the network front. The American plans are still under wraps and the appearance of any new network system in the UK is likely to be in the distant future.



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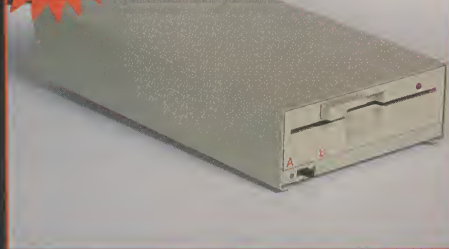
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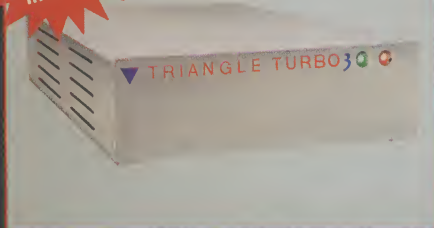
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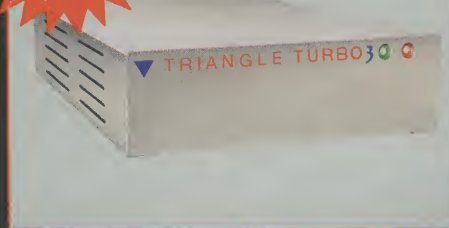
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Gallup Software Chart



| This month | Last month | Title (Software House) | Price | Month reviewed in Atari ST User | Comments | Marks from 10 |
|------------|------------|---|-------|------------------------------------|---|------------------|
| 1 | 1 | FALCON <i>Mirrorsoft</i> | 24.95 | March 1989 | Prepare yourself for a Mach 2 flight in an F-16 and join the growing class of military simulator enthusiasts. | 9 |
| 2 | 6 | BARBARIAN 2 <i>Palace</i> | 19.99 | May 1989 | This version has more depth, better graphics and improved sound. If you liked Barbarian you'll like this too. An excellent sequel. | 9 |
| 3 | 3 | FOFT <i>Gremlin</i> | 29.99 | May 1989 | Despite some nice additions, it owes much to its Elite mentor. Good marks for programming, but disappointing gameplay. | 8 |
| 4 | • | WAR IN MIDDLE EARTH <i>Melbourne House</i> | 24.95 | — | This Tolkeinesque title promises much and it has shot up the charts this month. One that has definitely been worth waiting for. | — |
| 5 | • | F16 COMBAT PILOT <i>Digital Integration</i> | 24.99 | — | This fighter pilot simulator has been years in development and will naturally be compared with Falcon. | — |
| 6 | 4 | LOMBARD RAC RALLY <i>Mandarin</i> | 24.95 | Jan 1989 | Can you win enough legs in this competition to customise your Cosworth, appear on TV and win a prize? Keep on playing and you'll get there. | 9 |
| 7 | 2 | GALDREGON'S DOMAIN <i>Pandora</i> | 19.99 | May 1989 | Colourful, detailed and eye-catching graphics, but few sounds and no animation. Attractively presented, but not an awful lot in it. | 6 |
| 8 | • | BALLISTIX <i>Psychapse</i> | 19.95 | June 1989 | Don't lose your marbles! If you do you will be met by some digitised cheering. Very playable. For one or two players. | 7 |
| 9 | 7 | DOUBLE DRAGON <i>Melbourne House</i> | 19.99 | — | Blast from the arcades again. Your mission is to rescue your girlfriend from a selection of nasties prowling New York streets. | — |
| 10 | 5 | OPERATION WOLF <i>Ocean</i> | 19.95 | March 1989 | Another success for a Taito Coin-op which has made a surprisingly good transition to the ST screen. Fun, and not too demanding. | 7 |
| 11 | 10 | CRAZY CARS 2 <i>Titus</i> | 19.99 | April 1989 | A sequel, but not a simulator. An enjoyable race against both time and your opponents. Nice graphics and good value for money. | 8 |
| 12 | 11 | THUNDERBLADE <i>US Gold</i> | 19.99 | April 1989 | Keyboard pilots have a good choice here, with wartorn skyscrapers, sea battles, rocky canyons and forests as the colourful backdrops. | 7 |
| 13 | • | ZAK MCKRAKEN <i>US Gold</i> | 24.95 | May 1989 | You can flit between four characters, but the pace is sluggish and involves frequent disc swapping. Large colourful, but slow animation. | 9 |
| 14 | 8 | ELITE <i>Firebird</i> | 24.95 | Nov 1988 | This one scores most on playability and addictiveness. In solid 3D it is stunning – a classic in its own right. | 9 |
| 15 | • | DUNGEON MASTER <i>Mirrorsoft</i> | 24.99 | May 1988 | Animated graphics and spot sampling effects make this quest worth dusting your codpiece off for. A superb role-playing adventure. | 7 |
| 16 | 17 | AFTERBURNER <i>Activision</i> | 19.99 | March 1989 | Without the moving seat and joystick found in the arcade version, this has little to offer which hasn't been seen before. | 7 |
| 17 | • | PAC-LAND <i>Grand Slam</i> | 19.95 | June 1989 | The sequel to Pacmania, this features in a very different cartoon setting. You are still chased by the four ghosts from the arcade original. | 9 |
| 18 | • | BAAL <i>Psychapse</i> | 19.95 | Feb 1989 | Superb – the best graphics seen so far from this Liverpool-based company. Complete with lovely sound effects, it makes an very playable game. | 9 |
| 19 | • | KENNY DALGLEISH SOCCER MANAGER <i>Cognito</i> | 19.95 | June 1989 | Easy to get into and pleasant to operate – but not much depth and no sound. Concentration on the graphics deters from the gameplay. | 7 |
| 20 | 9 | BATMAN <i>Ocean</i> | 19.95 | April 1989 | Fun to play and entertaining to watch, with many interesting locations to explore, puzzles to solve and old enemies to meet. Well worth a look. | 9 |

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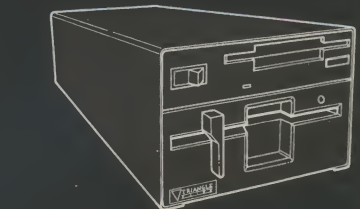
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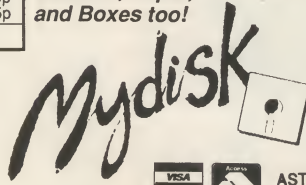
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mini OFFICE

P R O F E S S I O N A L

The Mini Office Professional suite heralds the beginning of a new era in productivity software for the Atari ST. The suite consists of five powerful modules which are available separately. Each one is simply bursting with features, and is both intuitive and quick to learn. It also makes the fullest use of the Gem environment with its pull-down menus, icons and dialogue boxes. All of them will work with any Atari ST with one or more disc drives and a monochrome or colour display.

The modules are fully integrated to maximise your efficiency. This means that you can pull graphics, spreadsheet tables and database information into the document processor – and do powerful mail merging too. You can load database files into the spreadsheet, or spreadsheet files into the database, and turn data from both into attention-grabbing charts. And any file can be sent to other ST owners down your telephone line using the communications module. The opportunities are endless.

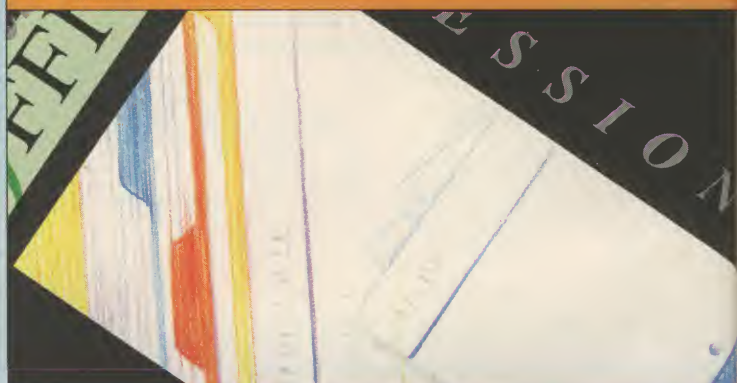
Every module comes with a set of invaluable desk accessories, described by ST World as “so useful that they might on their own justify buying the package”. There’s an all-purpose text editor, handy memo pad, pocket-style calculator and disc utilities – enabling you to format, rename, erase, copy, show info and list directory to screen, printer or a file – which you can use from within each program. You’ll also find that we applied the same attention to detail to the manuals too. ST World went on to say that the Spreadsheet manual was “one of the clearest and easiest to follow manuals I have seen for a long time”.

What is even more remarkable is the price – just £24.95 for each power-packed module (*Document Processor* £34.95 – available late summer). Start with one module – and you’ll want them all. You’ll be joining nearly 500,000 others who have discovered that the Mini Office range has revolutionised their productivity.

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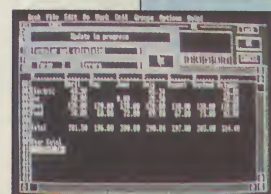
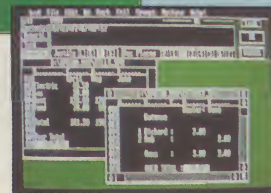
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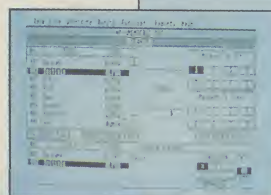
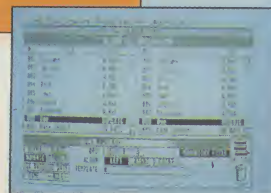
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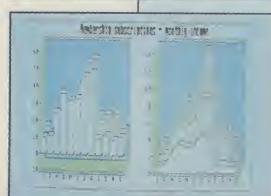
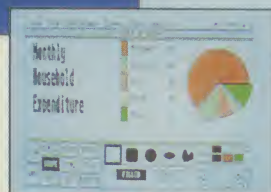
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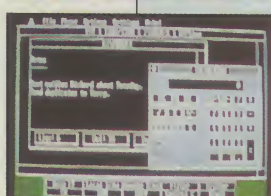
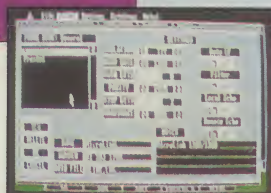


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Good for a laugh

Product: Typhoon Thompson
Price: £19.99
Supplier: Domark
Tel: 01-780 2222

EVERYONE in the office who saw Typhoon Thompson had fits of giggles – it's hilarious. Originally developed in the States, it will be released here on the Domark label.

The arcade action is set on the watery planet of Aguar some time in the future.

A young child, the only survivor of a crashed spaceship, is adopted by the sea sprites inhabiting Aguar. The problem is that they won't give him back and it's up to you – Typhoon Thompson – to rescue him.

In a very comical opening scene you are thrown out of a spaceship into a jet sled which hovers a few feet above the ocean. The sled is mouse controlled and you zoom off into the distance where you can see two small green islands.

There you are greeted by two cloaked guardian spirits who instruct you to bring them a valuable artefact held by the sea sprites. Off you go in search of a sea sprite village.

You soon reach an impenetrable

observatory where the first object is kept. It is surrounded by a ring of small islands where the sea sprites live.

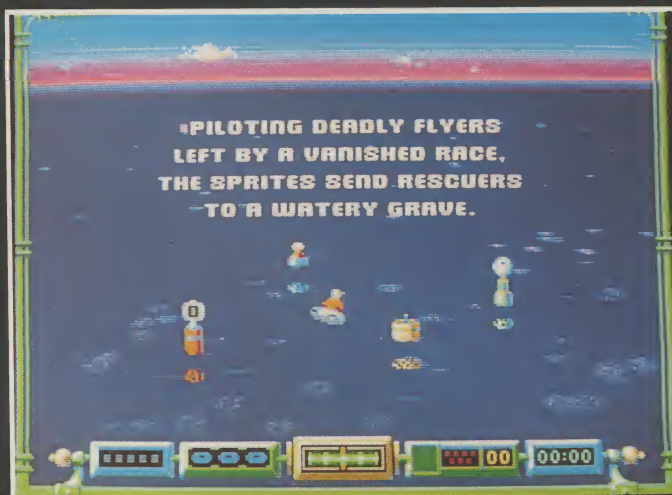
A quick blast of your laser canon at an island causes an object – a flyer piloted by a sea sprite – to be ejected. This can be any one of half a dozen different types, and all are pretty dangerous, so keep your distance.

The flyers consist of bubblebers, suckers, spitters, zappers, bumpers, forcers and wompers which try to zap you, batter your craft or push you away from the islands.

Manoeuvring your jet sled into position you fire another blast of laser canon at the flyer which then explodes and a sea sprite is catapulted out into the ocean. You must chase after it and scoop it up into a bag.

The sea sprites look remarkably like frogs swimming doggy-paddle style in the water and if you don't grab them quickly enough they soon turn into fish which swim and leap their way back to an island. You then have to shoot the island again to release the flyer to get the sprite and so it goes on.

Once you have collected all the sprites from the group of islands making up the village you park your



ATARI STAR USER GAME

jet sled next to the observatory. A teddy-bear like creature pops out and exchanges your bag of sea sprites for the artefact that the guardian spirits need.

Return to the spirits and present them with your prize. They then ask for another artefact and direct you to the next sprite village – another ring of islands surrounding an observatory. Each new village contains more sprites and the action becomes faster and more difficult.

The graphics, although small, are

superbly animated and very detailed. Each object has its own reflection in the water and the view is 3D looking down on the sea at an angle of about 20 degrees. Several comical sequences will have you in stitches, the sound effects are excellent and there's a nice tune at the start.

Typhoon Thompson is a fast and furious, funny and challenging arcade game. It is totally original so has novelty value too. I can thoroughly recommend it.

Roland Waddilove

| | |
|-----------------------|----|
| Sound | 8 |
| Graphics | 10 |
| Playability | 10 |
| Value for money | 10 |
| Overall | 10 |

SECOND Sight

Typhoon Thompson is a highly addictive and original game – it's like nothing you've seen before. Typhoon himself is a comical little character, and the reluctant hero of the game – just watch that start sequence.

If you're after something different, non-violent yet very playable then look out for this cracker of a game. I'll eat my hat if it doesn't reach the top 10 in the charts.

Janice Murray



Winter sports



Product: Downhill Challenge

Price: £24.95

Supplier: Broderbund Software, 17 Paul Drive, San Rafael, CA 94903 USA

Tel: 0101-415-992-3200

THE winter sports simulation market is already crowded, as this addition from Broderbund attempts to grab a slice of the action. Downhill Challenge offers four events in which to compete – downhill, slalom, giant slalom and ski jumping.

The game opens with a winter view of the booking office with signposts pointing to Exit, Score, Training and Compete. Clicking the mouse pointer on one will execute the appropriate option.

Training allows practise on any ski event before attempting the competition. A simple map shows three ski runs and an event is selected by clicking the mouse over the number below the one you want. This sets the difficulty level, with the more twisty routes the hardest to traverse.

You can compete against up to five friends or even the ST. To do this you register them in at the booking office by entering their names on a board.

Once registered, the competition begins. First comes the slalom, a skier preparing himself in the launch shed as you view him from behind.

He sets off and the view changes to show him hurtling down the slope with you looking from a point just behind him. As you guide the skier down the snaking, undulating slope figures and trees whizz by, enhancing the feeling of speed.

White noise effects are used to simulate the sound of skis on snow. The pitch rises and falls as the slope undulates and the skier even flies into the air if he goes over a rise too fast. All this gives a realistic effect.

The giant slalom is basically the same except that it's faster and the flag poles are doubled up just like in the real thing. The downhill event is

even faster but only a few flags are dotted around as you descend the slope. A clock at the bottom left of the screen times the run and a split timer next to it indicates progressive limits to beat.

In the ski jump pressing the fire button sets the competitor off down the steep slope. As he approaches the end press fire again to make him take off. You alter the skier's position in midair by moving the joystick backward or forwards as you must keep him in the correct position if he is to land safely.

The scores after each event are added up at the end of the competition and a picture is displayed depicting the winner on a rostrum with his rivals on either side.

The graphics are very well presented, the backgrounds being particularly well drawn. The skier is nicely animated and you really feel an urge to help him as he digs his skis into the snow on a tight bend. The sound is effective, although there isn't that much to it.

This is a welcome addition to anyone's winter sports collection.

David MacLachlan

| | |
|----------------------|---|
| Sound | 7 |
| Graphics..... | 8 |
| Playability | 8 |
| Value for money..... | 7 |
| Overall | 7 |

SECOND Sight

Downhill Challenge is competently programmed and graphically quite good, but for me there's nothing to make it stand out from the crowd. If you're on the lookout for a winter sports simulation then you won't be disappointed with this. However, I prefer last year's Winter Olympiad from Tynesoft.

Roland Waddilove

PREVIEW

Pac Land

Grandslam
Entertainments
(01-247 6434)

PACLAND is rather loosely based on that classic game Pac Man in which you run round a maze eating dots while being relentlessly pursued by ghosts. In this latest spin-off you again control Pac Man, but the graphics and gameplay are totally different. The action is seen side on and the graphics are cartoon-like. Your aim is to help a lost fairy find its way back home to fairyland. You must travel through towns, explore forests, cross deep canyons and trek through deserts.

There are natural hazards like rolling and tumbling logs in the canyons – you must leap from log to log – but the main problem is Blinky, Pinky, Inky and Clyde, the four ghosts from the original arcade game. They are never more than a step behind, so you mustn't stop to admire the scenery. They use a variety of props in order to foil your mission and appear in Model T cars running you down, old aeroplanes dropping ghost shaped bombs or flying at you. Fruit can be collected for bonus points on your journey.

Roland Waddilove

Running Man

Grandslam
Entertainments
(01-247 6434)



RUNNING Man is the computer game of the film of the same name, featuring that hunk Arnold Schwarzenegger. In it you control Ben Richards, a cop who was framed for a crime he didn't commit and forced to enter televised deadly games. The aim is to survive. The games are like an updated Roman gladiators' battle. Following the film story closely you face a series of dangerous adversaries bent on your swift demise. The action takes place in four zones, with a final confrontation in the television studio.

Zone one is an ice rink where you face Subzero – an ice hockey player with a razor sharp stick and exploding pucks. In zone two you face the chainsaw-wielding Buzzsaw in the suburbs. Take on Dynamo in the city lights of zone three. In the zone four complex hides Fireball with his flamethrower. Joystick controls enable you to jump, crawl, walk left and right, kick, punch, collect, drop and use weapons.

Janice Murray

Product: Dragonscape
 Price: £19.95
 Supplier: Software Horizons, 212A Colney
 Hatch Lane, London N10 1EU.
 Tel: 01-348 4577

IN Dragonscape from Software Horizons you take to the air atop a gigantic fire-breathing dragon, which makes a welcome change from the usual shoot-'em-up fare.

The story behind how you came to be in this precarious position is flimsy: While reading your favourite computer magazine you are whisked to Tuvania in a blinding flash of light. The King of Kaos has removed 40 magical artefacts from their resting places and you have volunteered to find and return them.

Garvan, the local fire-breathing, winged dragon offers his services. He's a bit dim witted, but strong and willing. So you both set off in search of the artefacts.

There are five levels and eight objects on each level. The objects must be found and placed in their correct positions before you can progress to the next level.

The action takes place in a smallish window in the centre of the screen. The display is a bird's eye view looking down on yourself on top of Garvan flying over the wastelands of level one.

When you fly up, down, left, right or diagonally the screen scrolls smoothly so that you stay in the centre of the playing window. The wastelands cover a large area and you can only see a small portion through the window.

You'll have to explore the whole area thoroughly for artefacts and their resting places. For instance, just below where you start you'll find an arrow, and further down and to the left there is an icon marked with a bow. Drop the arrow on the bow and go and find the next artefact.

Obstructing you in your mission are assorted alien creatures that swirl around, bumping into you and draining your energy. Garvan's fiery breath can be directed to fry them to a crisp.

A large green dragon to the right of the playing window slowly turns to a skeleton as your energy is drained. Your current and high scores are printed below the playing window. There isn't a high score table.

The sound is good with nice music, and the graphics are excellent. The scrolling and animation are smoothly executed and the whole package is professionally produced.

My only criticism is that the first level is far too difficult and if it wasn't for the cheat mode built in to



Hot stuff

my review copy I wouldn't have seen the other levels.

If you're after a tough new arcade challenge Dragonscape fits the bill admirably.

Roland Waddilove

**SECOND
Sight**

| | |
|----------------------|---|
| Sound | 8 |
| Graphics..... | 9 |
| Playability | 8 |
| Value for money..... | 8 |
| Overall | 8 |

Boy, is Dragonscape difficult! No matter how hard I try I can't seem to get further than returning three artefacts in level one. It's too difficult for me. The graphics are superb, but I wasn't too keen on the music.

Janice Murray



Super soccer

Product: Head Coach v3.1
Price: £19.95
Product: World of Soccer
Price: £17.50
Supplier: Qualsoft, 18 Hazelmere Road,
Stevenage SG2 8RX
Tel: 0438 721936

FOOTBALL management enthusiasts more interested in challenge, judgement and depth of interest in their simulations than graphics should seek out these two games. Whether you like American football or English soccer, this pair from Qualsoft has something for you.

Thankfully neither bothers with the administrative side of the sports so you can forget about financial worries and are free to concentrate on more immediate issues such as selection, tactics, plays and strategies.

Head Coach v3.1, an American football simulation, puts you in charge of the newest team in the NFL, the Schoburg Franklins. The 28 NFL teams are split into six divisions and you get to decide which of those sides the Franklins will replace. The higher up the division the team is, the tougher the inherited schedule.

At the start of the game, and between matches, a training camp is open for players to be put through speed trials and other comparative exercises. This is an excellent way to get an accurate assessment of individual capabilities. Also two preseason games let you experiment with players and tactics.

The screen is divided into four windows when a match is under way. Two show the elapsed time, score, current plays and a commentary. The largest window provides a representation of the marked playing area with the position of the ball highlighted. The fourth lists all the offensive or defensive options. Selection of plays from this list is by a single key press which has to be made before a 30 second timer runs down.

After a match the team doctor will pronounce on injuries, a panel of sports writers will award their votes to your team's best three players and other teams' results and forthcoming fixtures are listed. Like any good US football simulation, Head Coach offers a vast array of statistics.

World of Soccer simulates international soccer management. You can manage any one of 33 European squads. The four UK teams each have 16 preselected players but a customisation program lets you replace

them and add a further 20, or build squads from scratch for any of the other 29 nations.

The game covers friendly matches and the qualifying rounds and finals of both the European and World Cups and there are five difficulty levels. The hardest is rightly called masochistic.

As to be expected, there are quite a few similarities between this and other ST soccer simulations, but there is more going on under the surface than first meets the eye. For example, in addition to the difficulty setting there are four sophistication levels covering such elements as longitudinal and latitudinal balance – formation along and across the field – balance of skills, form and teamwork.

The team's skills are made up of five factors – midfield possession, mounting attacks, attempts on goal, dispossessing attackers and goal minding. Each match is represented as a few minutes game time, ball movement being shown by a coloured arrow moving around a pitch.

Both programs come with short manuals giving you insight into the games' workings. Sound plays little part and the graphics are quite rudimentary. What these simulations attempt to convey is the realism of judgement and the assessment and application of every available piece of information, a crucial part of every football manager's job.

Although not the most visually impressive, they do have great depth, longevity and highly addictive gameplay. Both are very good value for money.

Bob Chappell

| | |
|-----------------------|---|
| Sound | 0 |
| Graphics | 4 |
| Playability | 9 |
| Value for money | 8 |
| Overall | 8 |

SECOND Sight

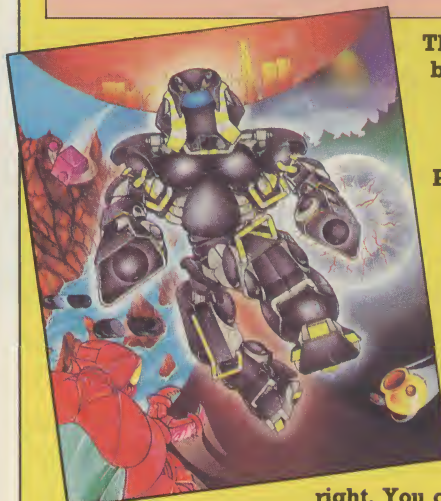
This is your golden opportunity to win both the World Cup and Superbowl in the same season. Management enthusiasts will revel in this dynamic duo. The graphics and sound aren't up to much, but the management simulation is excellent. Recommended.

Janice Murray

PREVIEW

Bio Challenge

Palace
(01-278 0751)



THE French can always be relied on to produce original software. Bio Challenge – released here in Britain by Palace – is yet another example of their vivid imagination. In this six-level arcade game you control a humanoid robot searching planets for pieces of an amulet. The action is seen side on and the screen scrolls smoothly sideways as you walk left or

right. You can travel between the planets using transporters.

On each planet are a number of alien monsters which must be disposed of. Some crawl and can be squashed by dislodging platforms suspended by anti-gravity charges. Flying objects swirl round the screen in patterns and drain your oil when bumped into. Oil cans litter the planet surface and provide means of topping up your dwindling supply.

Your main means of defence is by spinning like a top. However, other weapons and armour can be collected, but I've yet to discover their location. Bio Challenge is just the ticket if you are bored with stale British game ideas.

Roland Waddilove

Mars Cops

Arcana
(0272 297162)

PROGRAMMED by Nick Tuckett this new release from Arcana concerns your career in the UIPF – United Interplanetary Police Force – now based on Mars and commonly known as the Mars Cops. A strange alien race has been diverting asteroids

towards Earth and your job is to reconnoitre, search and destroy. Choose any mission relevant to your rank and experience, but beware if you do the same mission again as it becomes increasingly difficult.

Originally an Asteroids clone, it has developed into something more. There is a simulator option demanding pre-flight checks and close inspection of dials, gauges and supplies – based on the principles of the American space shuttle. Supplies are limited and economy is rewarded while demotion awaits the frivolous and foolhardy.

The gameplay is varied and interesting and the way that Mars features is excellent. This is a space adventure with a flavour of realism. Original music and synthesised speech will be added to this mix of tactics, strategy and shoot-'em-up.

Pam Turnbull



Product: Archipelagos

Price: £24.99

Supplier: Logotron Recreation, Chancery House, 107 St Pauls Road, Islington, London N1 2NA.

Tel: 01-359 3594

ARCHPELAGOS is the first release under the new Logotron/Mirrorsoft agreement, and what a cracking opener it is. Like many other recent games for the ST, it defies easy categorisation, but owes something to Firebird's blockbuster Sentinel and strategy elements from certain wargames.

The story goes that long ago in a place where a cloudy planet always hung above the north – notice it as you play the game – the Ancients played with worlds of thought. Together the power of their minds created hundreds of worlds, each an Archipelago, where they met and drank tea.

Their thoughts became so strong that the places eventually became real. When they slept they found the morphogenic patterns of their thoughts remained, to generate thousands more worlds, almost randomly.

Pretty soon 10,000 paradise Archipelagos became so popular that they attracted visitors from the thought planet of the north. Each visitor claimed an Archipelago for his own and staked a claim by placing an obelisk upon it.

These obelisks brought about conflict with the Ancients who were drained of their blood by the visitors and their bodies turned to stone.

In this mouse controlled game you are floating just a metre above the ground, as if disembodied, among a group of islands. Scattered around the islands are the aforementioned obelisks and stones of the Ancients.

Embodied in the obelisks is the power that cleansed the Archipelago of humans in ancient times. And the blood of the Ancients still stains the land.

Your task is to remove the power over the land and destroy the obelisks. You roam over a colourful through-scrolling landscape linking the stone remains of the Ancients to each obelisk.

This is achieved by creating land bridges over water and connecting the islands which contain the statues. You do this by pointing with the mouse cursor and pressing function key F1.

However, your land creating ability is limited and you should not over-stretch yourself without gaining new vitality from the stones.

This is not as easy as it seems, as



you are unable to land on any patch of land polluted by the blood of the Ancients.

You must also avoid drifting lost souls which appear after level 25 and the Necromancer who first appears at Archipelago 13. Blood eggs – from

level 20 onwards – and poison trees will also block your way. Each will lead you to a premature death and frustrate all efforts to cleanse the land.

With 9,999 Archipelagos to explore and conquer, the game is by no means easy. However, as you progress through each quest you will learn a few tricks and short cuts to make your task easier.

The animation and colour are stupendous but I feel the graphics could have benefited from a little more detail. The ongoing music reminds me somewhat of part one of Mike Oldfield's Tubular Bells and sound effects are unobtrusive yet

appropriate.

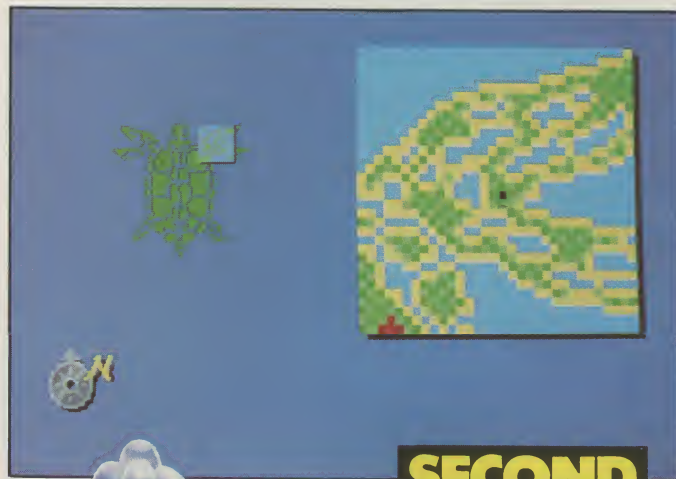
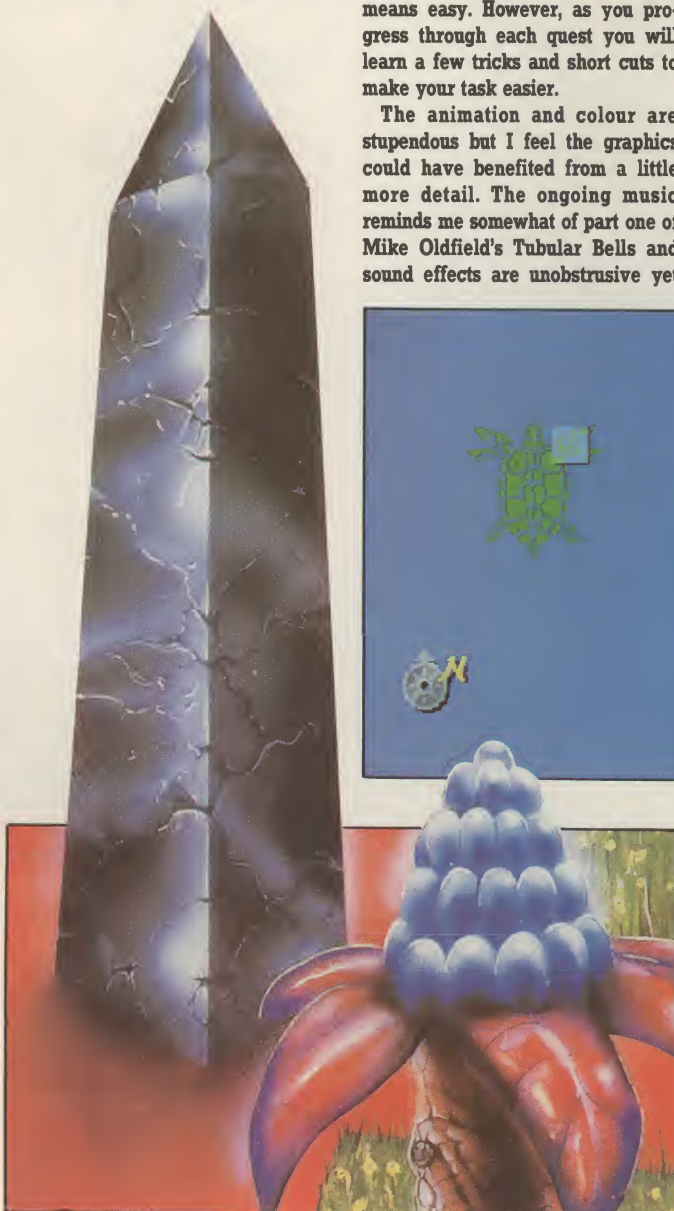
Gameplay is addictive and thoughtful and my lasting impression of Archipelagos is of a ponderous and time-consuming exercise in mental dexterity.

It has a slight flavour of the arcade but will appeal to almost any games player.

Buy it now, I assure you that you won't be disappointed.

Nic Outterside

| | |
|-----------------------|----|
| Sound | 9 |
| Graphics | 8 |
| Playability | 10 |
| Value for money | 10 |
| Overall | 9 |



SECOND Sight

I love this game, it's just so different. It had me hopping from island to island trying to make land bridges to destroy the obelisks.

The task is enjoyable, at times relaxing and definitely thought provoking. If you want a rest from alien zapping, slaughterhouse scenarios and mind bending text adventures, then this could be just the game for you.

Jayne West

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Zap a Zero

Product: Battlehawks 1942

Price: £24.99

Supplier: US Gold, Units 2/3, Holford Way,
Holford, Birmingham B6 7AX.

Tel: 021-356 3388

WHEN asked to review a naval air combat simulation, I automatically thought I would be putting the Microsoft F-16 in the hangar and hopping into the seat of an F-14 Tomcat or perhaps even the F-18 Hornet.

Then I saw the 1942 in the title – how could I survive without heat-seeking missiles?

After a tedious three disc changes the main menu pops up and offers four options – Training, Active Duty, Review Service Records or Review Planes. The first option allows you to brush-up on the skills needed to be a good fighter pilot.

Choosing Active Duty will give a choice of four famous 1942 battles, Coral Sea, Midway, Eastern

Solomons or Santa Cruz Islands. Within these there are more than 30 missions with varying difficulty levels.

After selecting a mission you will go to the Ready Room for briefing. Here you can modify your plane to give special features such as unlimited ammunition or fuel, change the starting position or begin the flight.

A further two disc changes and the passing of an aircraft recognition test launches you from the carrier at which point you take over.

Depending on the mission, you have to complete tasks ranging from the downing of Japanese fighters to the sinking of a carrier by dropping a single bomb or launching a torpedo.

Enemy planes may take more than

one hit to destroy completely. First there will be fire and then a puff of smoke signals the end. Sometimes pilots parachute from their burning planes into the sea below. I've tried strafing them, but haven't hit one.

The display shows the cockpit instruments, gunsight and front view. Pressing a key on the numeric pad changes to a rear view and you become rear gunner.

In the cockpit is an engine/airframe damage indicator which shows the amount of damage sustained and if either of the twin dials goes into the red the plane will lose power and ditch. At the end of each game a scoreboard will show the number of hits and downings on both sides.

The graphics, especially those of the planes, are very detailed and show the different airforce markings. The engine noise is quite realistic. The continuous hum is made much more interesting with spluttering and changing revs.

The game comes with a comprehensive 150-page manual illustrated with black and white photographs. It gives tips, instructions and a brief history of what happened in the real battles. There are some quick-start instructions so you can get straight into the game.

The only criticism I can make is that you don't control or see any take offs or landings.

A good simulation with many options and one which has been very nicely presented. However, if I had to make a choice between this and one of the other recent releases I would probably go for one of the F-16 simulations.

John Butters

| | |
|-----------------------|---|
| Sound | 8 |
| Graphics | 8 |
| Playability | 7 |
| Value for money | 6 |
| Overall | 8 |

SECOND Sight

After a quiet spell there have been a fair number of simulations recently, and good ones at that. Battlehawks 1942 is very different from the trend in that you don't fly at Mach 2 below 200 feet – definitely more my scene.

A reasonable product which would have been made much better with the inclusion of a landing sequence.

Nic Outterside



Program: King's Quest IV
 Price: £29.99
 Supplier: Sierra Online/Activision,
 Blake House, Manor Farm Road,
 Reading, Berkshire RG2 0JN.
 Tel: 0734 311666

WITH a three million dollar investment in the underlying technology of Sierra's 3D animated adventure game system, more than 11 man years of development and a team of more than 13 programmers, artists, musicians and developers, King's Quest IV just had to be pretty good - and it is.

Like Sierra's other recent text and graphics adventure, Leisure Suit Larry II (reviewed in our April issue), this one has better graphics and animation than ever before - but the price is that you'll need a double-sided disc drive to run it.

Subtitled The Perils of Rosella, King's Quest IV picks up where King's Quest III (To Heir Is Human) left off. Noticing the glint of spirited valour in her eye, King Graham of Daventry has now given his newly-rescued daughter Rosella the infamous adventurer's cap.

And just as well, for it soon turns out that it is King Graham's turn to be rescued in this traditional but absorbing tale of good versus evil.

The poor old ruler has contracted a rare malady. Illnesses are always vague in fairy stories and they're usually also fatal unless the one and only antidote can be found in the nick of time. Luckily, a good fairy named Genesta appears in a mirror and transports Rosella far away to the land of Tamir.

Here Genesta promptly informs Rosella about a marvellous fruit that can bring Pops back from the brink. But Genesta is no fool - one good turn surely deserves another. Genesta would like the return of her magic talisman which was pinched by the bad fairy Lolotte.

There's a lot of fairytale type fantasy, and all the paraphernalia - frogs, ogres, dwarfs and the like - that inevitably comes with it, in this adventure.

Now the talisman is very important to Genesta. Her powers are fading fast and unless she gets said lucky charm back pretty smartish she will be curling up her dainty size sixes and handing in her dinner pail and wand.

If she is no longer alive, then just who, pray, will get Rosella back to Daventry and to pater? Game, set and match to Genesta, methinks.

The game begins in a highly unusual fashion - a 10 minute cartoon that sets the scene. All you need to do is sit back and enjoy. The graphics and animation are very

Score: 0 of 230 KQIV The Perils of Rosella



Better graphics and animation than ever before

impressive - but then so they should be with all that money behind them.

Very soon, you're caught up in the story as the puzzles and problems posed to the heroine begin coming in thick and fast. A head dwarf, the inevitable frog, and a spooky house are among the first encounters. Later, you might be surprised to know that Rosella will be emulating Jonah of biblical fame.

On the other hand you shouldn't be startled to hear that figuring somewhere in this game is - you guessed it - a unicorn. A hag's eye is a bit more unusual and sounds a trifle unappetising but you're going to need one.

There's considerable concentration on traditional fantasy in this adventure and some may feel that they've heard a lot of it (if not all of it)

Rosella's perils

before. That may be true, but KQ4 rings some neat changes on the material and the game has the usual blend of warm humour and tricky puzzles that we have come to expect from Sierra.

Coupled with the impressive use of sound, eye-catching graphics, excellent animation, handsome presentation and ease of operation, King's Quest IV has got to be a worthwhile investment for all Sierra adventure fans. And I'm certainly one of them.

Bob Chappell

| | |
|----------------------|---|
| Presentation..... | 9 |
| Atmosphere | 8 |
| Puzzlement | 8 |
| Value for money..... | 8 |
| Overall | 8 |

SECOND Sight

Sierra Online's adventures are always sure-fire hits and this is no exception. The graphics are superb and the gameplay excellent. If you're a fan of this series of adventures rush out and get it - you won't be disappointed.

Janice Murray



There's mouse control if you want it

Lombard



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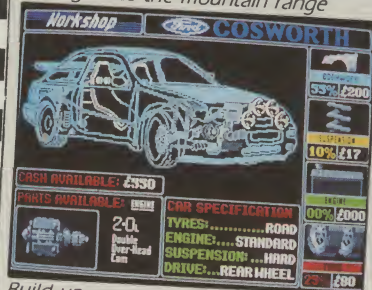
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'Thoroughly engrossing . . . highly recommended . . . the best controls I've encountered in any computer race game' – Computer and Video Games, January '89

'The definitive racing game . . . Overall 95%' – Computer Gamesweek, November 5-15, 1988

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Program: *Balance of Power 1990*
 Price: £24.95
 Supplier: Mindscape, PO Box 1019,
 Lewes, East Sussex BN8 4DW.
 Tel: 044-486 545/547

I TOLD the General Secretary of the USSR; "Pull those Russian troops out of Afghanistan or face the consequences." He refused point-blank.

As President of the USA, I had only two options, to back down and face massive loss of international prestige or to carry out my threat and risk a nuclear war.

Balance of Power – the 1990 edition – is a comprehensively updated and enhanced version of what is arguably the finest, certainly the most detailed, strategy game ever released for the ST.

The aim is to gain geopolitical prestige while at the same time weakening the prestige of your superpower opponent. At the end of an eight year game period from 1989 to 1997, provided nuclear war has not destroyed the world, the side with the most prestige points is declared the winner.

The game may be played between two players or between one and the computer. Each side takes on the role of President of the USA or General Secretary of the Soviet Union.

Geopolitical prestige is gained by a series of strategic decisions, the aim being to court popularity with the most important countries – those with the most military power. In short, try to win powerful friends while insuring that your enemies remain weak.

You can be nice to a government that likes you or attempt to overthrow one that doesn't. You may opt to use monetary aid or intervene directly for a friendly country. Going on the offensive, you may wish to nurture local insurgency by providing money or military support for rebels.

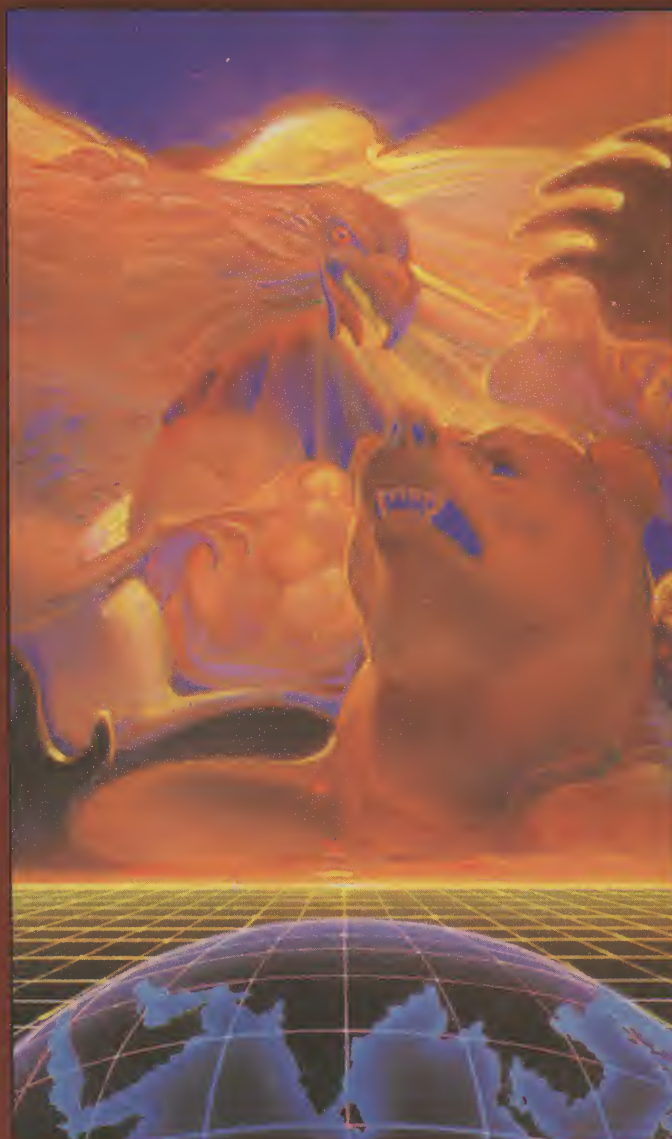
There are constraints, like your budget, the number of troops available and whether the required troops are already located in an adjacent territory.

You might also opt to intervene for rebels, pump in economic aid or set about destabilising a country by using the CIA or KGB, to spread unrest and dissension to trigger a coup d'état. Further options allow you to sign a treaty with a nation or apply diplomatic pressure.

When you've done all you wish the computer figures out its side's reactions to your policies and may then launch a series of challenges to your actions. It analyses the news and determines the developments in each country.

There are four levels of gameplay

Russian roulette



– beginner, intermediate, expert and multipolar. Beginner level, intended for training, is a good way to become familiar with the game's many facets. Intermediate, expert and multipolar levels contain succeeding more elements, adding various other complexities.

Once into a crisis you have a number of advisers offering information on how they see the significance of the event. Trouble is, like most experts, they are not always right. The longer one of the two sides takes to back away from the confrontation, the more prestige points the retreater loses.

The danger is that each successive phase moves the two countries closer to war. Unless one side relents, the situation escalates through a number of phases including challenge, diplomatic crisis and Defcon.

Defcon is the state of defense condition of a superpower. Defcon 5 is peace – minimum readiness – while Defcon 2 is maximum alert. At Defcon 3 an accidental nuclear war is all too likely while Defcon 1 spells the end – all out nuclear war is declared and both sides have lost.

A briefing menu, with three options of closeup, background and history, provides an astonishing amount of data on any of the 80 nations represented in the game. There are many graphs, barcharts and statistics.

Balance of Power comes with a 91-page manual, the clarity and presentation of which is a model of excellence. The game's use of modeling and artificial intelligence techniques, the massive database, the superb world map and the design of the player's interface are magnificent. *Balance of Power 1990* is the crème de la crème of strategy games.

Bob Chappell

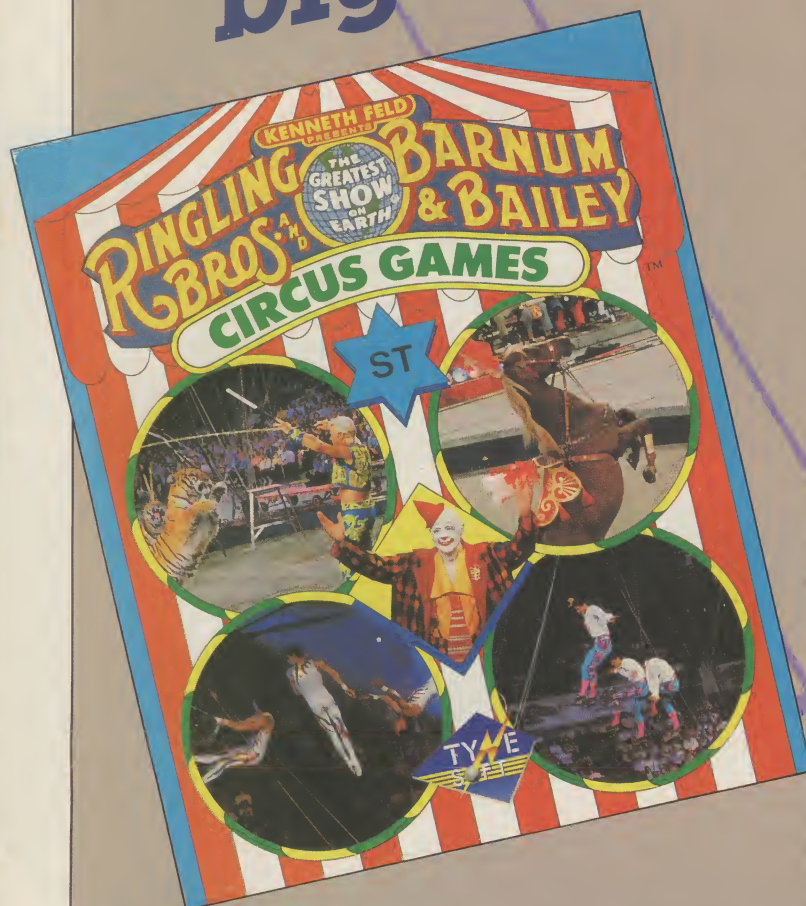
| | |
|-----------------------|----|
| Sound | 0 |
| Graphics | 8 |
| Playability | 10 |
| Value for money | 9 |
| Overall | 9 |

SECOND Sight

This strategy game is a marvellous achievement and splendid to play. Don't whatever you do pass it by – you would be missing out on something quite exceptional. The depth of gameplay is extraordinary; this package is thoroughly recommended.

Janice Murray

Under the big top



Product: Circus Games

Price: £19.95

Supplier: Tynesoft, Addison Industrial Estate, Blaydon, Tyne & Wear NE21 4TE

Tel: 091-414 4611

ROLL up, roll up! Step inside and take part in the greatest show on earth. The sequined tights and leotard are optional.

Tynesoft's Circus Games is a novel variation on the old Decathlon theme. Such tedious events as the 100 metres sprint and the javelin have been superseded by the vertigo-inducing high wire act and the terrifying tiger training.

Suitably circus music accompanies the animated title sequence and the player selection routine. The music is adequate but not stunning and I usually played the game with the volume turned down in an attempt to retain my sanity.

Unfortunately, the sound effects are more muted than the music, so the volume level had to rise again to enable me to hear the little chappie under my control thud into the sawdust as he parted company with the high wire.

Event number one is tightrope walking. High above the ring with balancing pole grasped firmly you step gingerly onto the wire and begin your crossing.

Your objective is to reach the far side without losing your balance. This is done by counteracting any signs of overbalancing using the joystick. Bonus points are awarded for performing handstands and jumps

while on the wire.

Striding elegantly into the ring is the heroine of the second event – the trick horse riding girl. With one bound she leaps astride the galloping beast, whether or not she stays there is dependant upon your ability to maintain her balance.

An electronic spirit level at the top of the screen fluctuates too and fro and you must keep it central. This is no mean feat when she is seated and is practically impossible while performing a forward somersault or a hand stand at full gallop.

The trapeze is probably the most spectacular of the four events. Using powerful leg movements you gradually increase the amplitude of your swing in preparation for that heart stopping flight between the trapezes.

I strongly recommend you let the computer go first in this event, count the number of preparatory swings made and note the point at which it releases his grip.

When you have completed a simple flight you can move on to the more advanced movements. These incorporate somersaults and corkscrews, with and without a catcher on the far trapeze.

Event number four is the one that sorts the men from the boys – tiger training. Who in their right mind would face three fully grown tigers armed only with a whip and a chair? I'd insist on a bare minimum of an Uzi and a pocket full of grenades.

Your task is to guide the beasts over a podium, through a flaming hoop and into a short tunnel. Unfortunately, things don't always go as planned due to the cat's preoccupation with lunch.

The graphics and animation throughout Circus Games are excellent. This is ST software at its best.

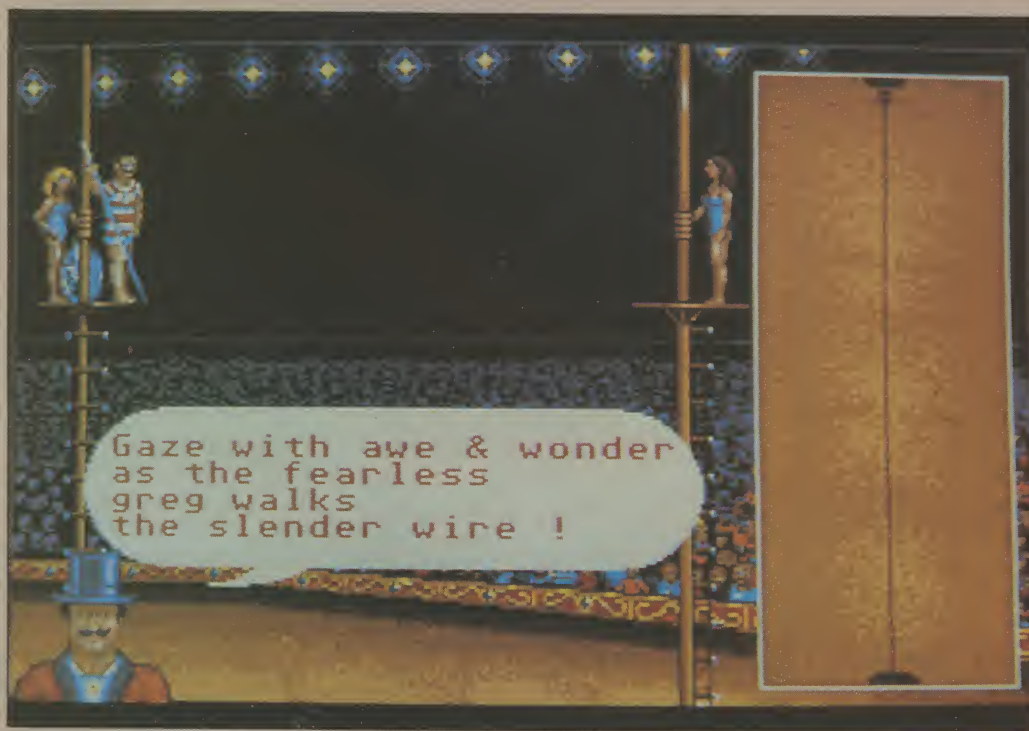
James Riddell

| | |
|-----------------------|---|
| Sound | 6 |
| Graphics | 9 |
| Playability | 9 |
| Value for money | 9 |
| Overall | 9 |

SECOND Sight

Circus Games is another multi-event blockbuster of a game from Tynesoft which seems to be specialising in this type of software. Taken individually, the events are not anything special, but as a complete package it provides a lot of fun and entertainment. One for all the family.

Roland Waddilove





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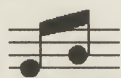
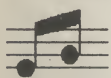
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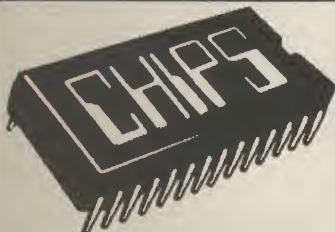
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| | Compile/ Link | Run | Error | Compile/ Link | Run | Error |
| Hello.c | 2.43 | — | — | 15.98 | — | — |
| Apskel.c | 8.88 | — | — | 26.5 | — | — |
| Sieve.c | 4.59 | 2.45 | — | 23.9 | 2.77 | — |
| AES | 35.6 | — | — | 103 | — | — |
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Product: Road Blasters

Price: £19.99

Supplier: US Gold, Units 2/3, Holford Way,
Holford, Birmingham B6 7AX.

Tel: 021-356 3388

THE problem of congestion on the M25 may soon be over, that is, if Government notes this new coin-op conversion from US Gold in which you take part in what the inlay describes as the "race of the future".

A rather tedious wait while the game loads leads to a menu where you can select your method of control, look at the high score table, turn the music on or off or watch a demonstration. There are three starting positions - Bubble City, forest or desert.

The first, for the rookie, starts at level one. Forest is for the intermediate player and starts at stage four. Selecting this one hands over a bonus

Killer turbo

of 50,000 points.

Kamikazies should go straight for desert and the eleventh stage; for your bravery you're awarded 200,000 points once you've completed the level.

Travelling through each of the 50 countries known as Rally Stats in

your two-door GWR 68 Turbo is by no means easy. All manner of things will hinder your progress, including a limited supply of fuel.

The computer drives up to four different types of vehicles which are on the road to prevent you from reaching your goal. However, you do have an advantage in that your car has a gun fitted as standard. Fighter

planes will occasionally fly above you and drop a special weapon which will, if caught, increase your power.

You will have to be on the look out for additional obstructions such as mines, spikes being thrown by opponents, patches of oil which will spin your car and gun turrets at the roadside which shoot you.

Once you've passed certain points you will have the option of going into Warp mode to one of three higher stages in the game.

You have two fuel tanks, main and reserve, and once they're both empty the car will lose power and grind to a halt. At this point you will lose one of five lives. Fuel is lost by driving too slowly, crashing too often or being destroyed by the enemy.

Extra fuel is put into the main tank whenever you drive over green or red globes on the road, also when you pass the mid-way point and reach the end of a level. The reserve tank is filled slightly at the end of each level, the amount of fuel you get depending on the number of enemy vehicles knocked out during that stage.

The main part of the display is used to show the road, scenery - which moves at a different rate to the road - and the current Rally Stat which is shown in the top right-hand corner. Underneath this the car's mine detector, speedometer, score, amount of fuel remaining and current weapon.

The game can be played with mouse or joystick. I preferred the joystick control, although the mouse was precise and with a little patience I got the hang of it.

I enjoyed Road Blasters, but I would recommend you try before you buy.

John Butters



| | |
|-----------------------|---|
| Sound | 7 |
| Value for money | 7 |
| Playability | 8 |
| Graphics | 8 |
| Overall | 8 |

SECOND Sight

Are software houses really so desperate for ideas that they have to copy the same game over and over again? Surely it's about time we had something different.

Apart from that, Road Blasters is quite good if taken in small doses, although it isn't a game I would rush out to add to my collection.

Roland Waddilove

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Product: Mad Flunky
 Price: £14.99
 Supplier: Alternative Software, Units 3-6
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 Tel: 0977 797777

AUTOGRAPH hunting is the unusual theme of this arcade adventure game from Alternative. In his search for increasingly exclusive signatures Flunky has managed to get himself a position as a servant in Buckingham Palace. By pandering to the whims of the Royal Family he can cajole the individual members into signing his book.

Apart from the occasional burst of digitised speech, sound is limited to an irritating, repetitive, tune – which can be silenced.

Flunky's main objective is to light every fire in the palace, a task he performs with a handy book of matches. While doing so he encounters various members of the Royal Family, each requesting a different favour – Andy wants a boat, Di has misplaced her wig, Prince Philip is horseless and Fergie needs some freckles – you can also collect bonus points by attending to Princess Margaret.

Royal encounter



"How easy these tasks are", I thought to myself as I stumbled upon a toy boat just outside Andrew's bathroom. Proudly I presented his royal personage with my prize, only to be told that it was the wrong one and was promptly shot.

I doubt very much whether you will be able to locate the well hidden real boat without help.

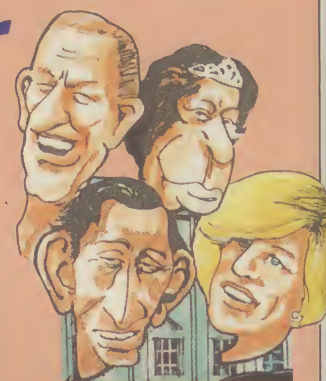
Prince Philip's horse appears to be Trojan in nature. As you approach the tiny wooden animal a swarm of little people jump out and kill you. The staff turnover rate in the palace

must be phenomenal. All I did was wander into the kitchen for a sausage with which to capture the Queen's doggies and the chef axed me.

Flunky's graphics are average and the sound is poor – the game's only redeeming feature is its clever mix of humour and puzzles.

Nev Astly

| | |
|-----------------------|---|
| Sound | 5 |
| Graphics | 6 |
| Playability | 8 |
| Value for money | 6 |
| Overall | 7 |



SECOND SIGHT

Flunky is an original game that has a great deal of potential. It's irreverent, but funny, caricature of the royals is its saving grace – without this it would be just another second rate arcade game. Had Alternative invested a little more time, improved the graphics and incorporated some decent sound effects its rating would have been much higher.

James Riddell

DEEP trouble

Program: The Deep
 Price: £19.99
 Supplier: US Gold, Units 2/3, Holford Way,
 Holford, Birmingham B6 7AX.
 Tel: 021-356 3388

THIS latest addition to the serried ranks of US Gold software is from Cream Software Corp, which is not exactly a household name. Instead of fighting hordes of psychopathic aliens, the enemy here lies in the depths of the Earth's oceans.

To start you press the fire button; I did but nothing happened. I eventually figured out that the joystick must

be plugged into the mouse port – an annoying hassle on the 520STFM.

At the top of the screen is the scoreboard and below is a cross-section the sea with a ship on the surface about two thirds up the display. Part of the sky can also be seen.

You can move the ship left and right and to combat the enemy attacking from beneath the waves you have a supply of depth charges. The inhabitants of these waters are quite strange – when was the last time you were torpedoed by a giant squid?

Some attackers release a cargo pod which floats to the surface when destroyed. The pod can be identified by a flag floating on the surface and when you pick it up a helicopter flies to the centre of the screen and drops a package for your ship. You have to be directly under the helicopter to receive it.

There are several packages to collect. One gives your ship hydrofoil speed, another a smart bomb or more powerful depth charges. The most important one gives you a pod which can be directed underwater to collect a token from the seabed.

Once you have collected a certain number of these tokens your ship is positioned at the far left of the screen while an enemy ship approaches

from the right. You have to destroy it by firing shells at its bridge.

The next stage of the game involves dropping depth charges down the hatches of a giant submarine to destroy its cargo of cruise missiles. The final stage reminds me of missile command – you control a gunsight and destroy missiles heading towards passenger ships which are attempting to rendezvous with you.

It sounds quite appealing, but in fact it's fairly simple, and reminiscent of old 8 bit games.

Stephen Cogan

| | |
|-----------------------|---|
| Sound | 6 |
| Graphics | 5 |
| Playability | 6 |
| Value for money | 5 |
| Overall | 6 |

SECOND SIGHT

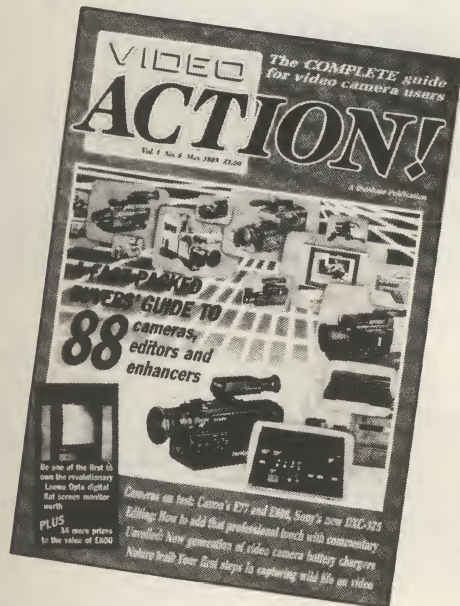
Although I found this quite entertaining, it's rather like an updated Spectrum conversion. Simple graphics and gameplay don't stretch the capabilities of the ST far enough. My advice is to wait until it comes out on a budget label.

Roland Waddilove



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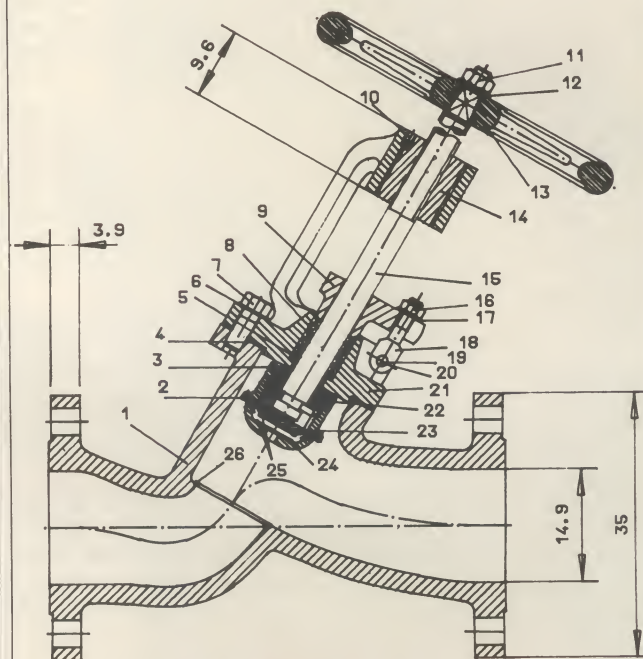
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Comic book capers

IN a bid to thwart a takeover of Melchester Rovers' famous ground by property developers, good old Roy Race has arranged a charity match to raise enough money to keep out the bulldozers. But wait – dirty deeds are afoot. On the eve of the five-a-side match four of Roy's team have been kidnapped.

In the first section of this two-part game, Roy is involved in a race against the clock to rescue his teammates from the kidnappers.

Thugs, booby traps, ambushes and other dangers have been placed in Roy's way, but it's comforting to know that his mum is on the sidelines waiting to revive the players with a nice cup of tea.

This part of the game breaks no new ground and is the usual sort of seek and find romp. You have to guide our hero around a number of streets, picking up and using objects in furtherance of the main aim.

Using pull-down menus, Roy can be made to walk or run and can chat or fight with people. If all else fails he can always give them one of his flashing smiles. He can pop home if

Program: Roy of the Rovers
Price: £19.99
Supplier: Gremlin Graphics, Alpha House, 10 Carver Street, Sheffield S1 4FS.
Tel: (0742) 753423

he likes or pay mum a visit.

This is all good homespun stuff, straight from the pages of the comic, you'll note. If Roy gets really desperate he can ask for help. It'll cost him a few points if he accepts assistance, though.

The second part of the game, which can be played immediately without going through part one, is the five-a-side match. I had higher hopes for this, but was disappointed. It's all been done before, and this rendition is no better and no worse than so many others.

The control method is a bit odd. For instance, you press the fire button to switch between players, the currently controlled one being indicated by a different colour. You have the choice of playing a one or two player game.

The graphics are colourful, sharp and attractive and the animation is reasonably good. Sound is mainly confined to a hissy but merry tune that quickly grates on the nerves



there are and a few other spot effects.

Roy of the Rovers offers two types of game for the price of one, but both are distinctly average and ring no new changes on old themes. Of the two, the first game is the more engaging, and those seeking a really good soccer match simulation must wait for something better to turn up.

Bob Chappell

| | |
|-----------------------|---|
| Sound | 5 |
| Graphics | 7 |
| Playability | 6 |
| Value for money | 5 |
| Overall | 5 |

SECOND Sight

Roy of the Rovers has leapt out of the comic book into your ST, and his adventures can now be followed on your micro. Trouble is, I wasn't that keen on Roy's antics in the first place, and this computerised version hasn't fuelled my enthusiasm. Definitely try before you buy.

Janice Murray

Product: Ballistix
Price: £19.99
Supplier: Psyclapse, Port of Liverpool Building, Pier Head, Liverpool L3 1BY.
Tel: 051-207 0825

FORGET pinball and ice hockey – Ballistix from Psyclapse is a whole new ball game. The aim is to score more goals than your opponent, the ball being a giant marble propelled by smaller ball bearings shot at it from your controller.

The pitch is littered with a variety of hazards designed to frustrate your aim. What with pinball bumpers, accelerator arrows, splitters to fill the screen with dozens of ball bearings, magnets to pull the marble away and tunnels to hide it in, even hitting the marble can be a difficult task.

Added to this is the sheer speed of play which resembles that of ice hockey. All the ingredients are here for a fast, exciting, joystick-wrenching time.

The play area is several screens deep and scrolls smoothly vertically, keeping the marble more or less central. Meanwhile around 20 ball bear-



ings can be whizzing around causing chaos as rebounds interfere with the current shot.

All movement is smooth and fast, which coupled with beautifully detailed backgrounds and clear, well chosen colour schemes, makes for an excellent visual experience.

Sound is limited, consisting mainly of boings when the marble rebounds from the edge of the playing area and plops when ball bearings are fired. Sampled cheers and boos greet goals,

but musical accompaniment is non-existent.

More than 130 screens are included, each with its own variety of hazards to give plenty of variation. Games can be played between two humans – for which two joysticks are needed – or human against the ST.

Psyclapse has thoughtfully included many user-selectable options such as starting screen, ball speed and life and auto fire rate. This nice touch allows the rank beginner

to get going while not making things too easy for arcade addicts.

This game should appeal to most people, though I wonder whether even the large number of screens will create lasting interest. Gameplay is too fast to allow tactical manoeuvres, leaving fast reflexes as the main requirement.

Pat Winstanley

| | |
|-----------------------|---|
| Sound | 5 |
| Graphics | 8 |
| Playability | 7 |
| Value for money | 7 |
| Overall | 7 |

SECOND Sight

Ballistix is a fast and exciting game requiring lightning reflexes and a fair degree of skill. It's like a computerised version of marbles played on an obstacle course.

The concept is quite original, so the game has novelty value and proves quite addictive. I found the two player option best.

Roland Waddilove

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Freedom

A fascinating game of strategy and role-play combined with gripping combat.

In the 18th century in a tropical plantation of a sugar producing colony, as the leader of a slaves' revolt, you are attempting a heroic escape towards freedom.

In the game you can select the level of difficulty, choose your character's personality, rally round other slaves, set fire to buildings and fields, challenge your enemies with the cutlas and confront the fearsome hounds set at your heels.

But will you succeed in your efforts to liberate yourself and your fellow slaves to freedom?

20,000 Leagues under the Sea

Excerpt from the Coktel Post, 5th July 1867:

"Monster of the deep strikes again!

"The government has fixed the departure date for the famous vessel the 'Abraham Lincoln', helmed by Mr. Farragut who is going off in search of the deep sea monster.

"The great French professor, Mr. Arommax, will also take part in the expedition."

So begins this amazing computer adaptation of Jules Verne's classic novel. Can you win through where others have failed, and overcome what lies ahead - 20,000 Leagues under the Sea?

Killdozers

This is an original game which exploits your ST's capabilities to the full.

It has more than 150 screens, digitised music and sound effects, more than 350 sprites, plus a construction kit for you to create your own scenarios. Much more than just a fast-action game, Killdozers combines role-playing, adventure game and arcade features.

Your task is to destroy UNICOM, the mad computer that threatens to annihilate humanity with the aid of its mechanical creations. The battle requires tactical thinking and clear judgement in selecting the weapons you will need.

Be well prepared... killdozers will thoroughly test your reflexes, intelligence, tactical skills and creativity.

Elemental

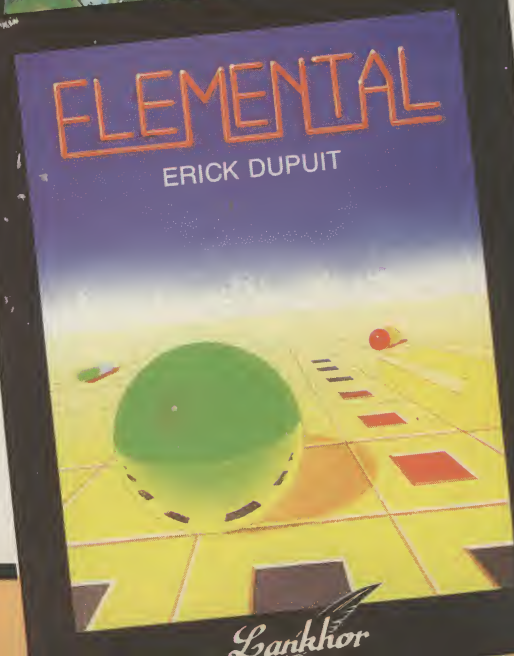
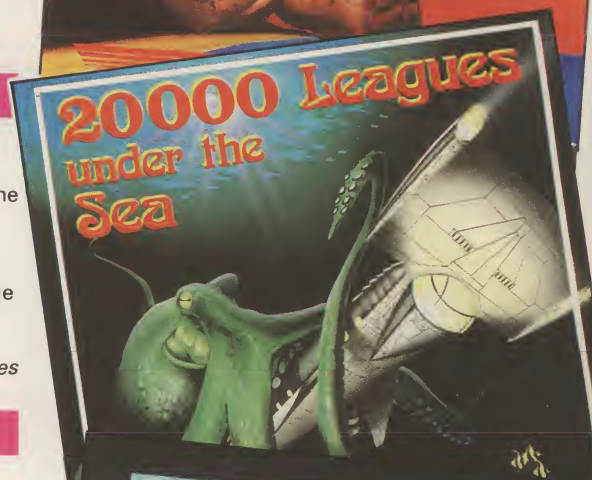
Elemental is a four-sided world where the elements have never really merged. The beings that inhabit it are rather original too. Their simple diet consists of Roundlines and you are a Roundline in the prime of youth - very appetising!

You are now at the age when you have to undergo "The Great Ordeal", the test that, if accomplished, turns a Roundline into an adult.

Will you come through the 32 stages with flying colours, and survive the test that stands between you and the wisdom of the elders?

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TO ORDER PLEASE USE THE FORM ON PAGE 133



Program: Kenny Dalglish Soccer Manager
 Price: £19.99
 Supplier: Cognito, 28 Osborne Road, Jesmond, Newcastle upon Tyne NE2 2AJ.

HERE is another in what seems to be a flood of soccer simulations. Kenny Dalglish Soccer Manager from Cognito has concentrated more on the graphics side of things and as a result the gameplay has suffered somewhat.

You can manage any team with any players, selecting from those provided or replacing them with your own.

The main screen displays a soccer stadium containing six pictures, three representing the boardroom, your team and a bookcase, and three

Here we go, here we go...

allow you to change names and save and load game positions. Selection and play, apart from the occasional text entry like name changes or amount of bank loan required, is under control of the mouse.

Clicking on the boardroom icon brings up six faces – the chairman, accountant, bank manager, coach, physiotherapist and scout. The chairman will give you a terse reminder about what he expects from you, together with a job security rating. The accountant keeps track of the wages bill and bank balance

while the bank manager coughs up loans on demand.

The physio tells you who's injured or suspended, while the coach provides ratings on the team's ability in defence, midfield and attack.

The bookcase icon allows you to choose between detailed statistics on the squad's skills or just a basic rating – you can switch between the two at any time. Also whether or not to show animated highlights of each match. These sequences are weak – movement is slow, jerky, and unrealistic.

The team option lets you sell players, pick your first 11 and substitutes from the squad, check on the next fixture, call up the league table and play the match.

Assuming you haven't selected the animation option, you are given the match result, followed by the results of all the other matches in that division.

While the game is fun to play, there's not much depth to it and

there's no sound. I would rather have seen less attention paid to presentation – the animated highlights could have been scrubbed – and more given over to gameplay.

On the plus side, it is very easy to get into and pleasant to operate. The selection and dropping of players is simplicity itself.

Another helping of soccer fun, but one which brings nothing new or special to the scene.

Bob Chappell

| | |
|-----------------------|---|
| Sound | 0 |
| Graphics | 6 |
| Playability | 7 |
| Value for money | 6 |
| Overall | 7 |

SECOND SIGHT

Groan – not another football simulation. This one's got some pretty pictures up front, but apart from that there's not much to it. The action replays are amusing – pity they're meant to be serious. There are similar games around that are just as good or better.

James Smith



Product: Backgammon
 Price: £19.99
 Supplier: Atari/A1 Distribution, Unit 3-6, Baileygate Industrial Estate, Pontefract, West Yorkshire.
 Tel: 0977 797777

BACKGAMMON conjures up visions of men in white evening suits and black dickies wagering thousands on a roll of the dice. Yet the game is probably the oldest board game around. Atari has now launched this ancient game of luck and skill into the 16 bit 1980s.

Backgammon comes complete with a comprehensive handbook providing instruction for the inexperienced player, a list of effective opening moves and a description of the program's many facilities.

For those readers who are unfamiliar with it, Backgammon can be loosely described as Ludo for grown ups. The aim is to move your 15 pieces around the board until they are all within your inner table. Once inside this quarter of the board you can start to remove them. The winner is the first player to remove every piece.

Any piece that is alone on a spike is considered vulnerable and is likely to get stomped by an opposing piece. All such casualties are placed on the

central bar and must re-join the board before that player can make any further moves.

Ideally you should move your pieces around the board in pairs while bashing all opposition stragglers, thus impeding your opponent's progress.

The main difference between Backgammon and Ludo is the financial aspect. An initial stake is decided upon before starting. However, you can choose to double this should you feel that you have the edge over your opponent. A dialogue box appears on-screen and the computer decides whether to accept your double or to resign.

Many of the features you would expect in a computerised board game have been implemented. There are 10 different levels of play. At the lowest the ST almost moves its pieces at random; at the highest you find yourself praying for a fortuitous roll of the dice.

Unfinished games can be saved to disc for completion at a later date and problems can be set up and played using the prepare option. The unscrupulous gamer is catered for with the inclusion of Swap Players and Move Back. The final feature available is Action Replay, which replays your last game in its entirety.

The game employs no sound

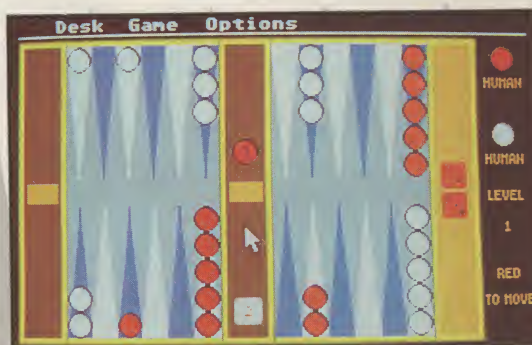
effects and uses simple, but adequate, coloured shapes to represent the board and its pieces. The most disappointing of the graphic routines is the dice rolling – one by one two squares slide onto the screen, each one already displaying the number thrown. More excitement could have been generated by simply rolling the dice into position.

Even without the cash incentive I found it hard to resist playing just one more game.

Carol Barrow

| | |
|-----------------------|---|
| Sound | 0 |
| Graphics | 7 |
| Playability | 9 |
| Value for money | 8 |
| Overall | 8 |

Stomping fun



SECOND SIGHT

Although less common than chess, Backgammon is every bit as exciting and challenging. This conversion is well written and provides levels of play suitable for novices and experts. It is, however, lacking in the sound and graphic departments.

Roland Waddilove

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By IAN WAUGH

THERE must be more Yamaha DX synths and expanders out there than any others. Apart from the ubiquitous DX7, all the other DX synths have only four operators. The DX7 has six, and Dr T has taken advantage of this similarity to produce one package which will edit all of them.

It's not quite that simple however, because whereas the voices of the DX-21, DX-27 and DX-100 are almost compatible with those of the TX81Z expander, the FB-01's voices aren't. Dr T's 4-Op Deluxe solves this problem by having separate programs on the same disc, one for each kind of synth. You can swap DX and TX81Z voices and there is a DX to FB-01 file converter – not exact, but close.

The programs don't use Gem, but all features can be controlled by the mouse and most can be accessed from the keyboard.

They are quite complex and the screens are crammed with information. Virtually all the parameters for a voice are shown on screen at once, but despite the abundance of information editing is made much easier.

Let's work through the programs and see what is on offer. The screens are divided into boxes – Menu, Files and Voices. Files shows the names of the banks stored in memory which can be saved and loaded as separate files. The DX program holds eight banks of voices, the TX81Z holds four and the FB-01 two. A new bank is only a click away and the Voices box shows the voices in the current bank.

The Menu box holds the key to most other functions and whisks you away to the wonders of the Voice and Performance Editors. These work in similar ways. Each has three buffers which allow you to retrieve the last edit via the Undo buffer and compare one voice with another using the Compare buffer.

After a Compare, parameters which are different are highlighted and you are given the option of selecting and copying any of them to your edit voice.

On to the Voice Editor Screen itself. Now you can see what an FM voice looks like. Of particular interest is a graphic display of all four operators' envelopes. You can pick up a point and drag the envelope around the screen and you can scale the resolution from 1ms to 32 seconds in order to concentrate on fine

What the doctor ordered

Dr T's new Voice Editor reviewed and more PD music software goes under the microscope

detail. You can mute individual operators, which helps you see – or hear – what contribution they make to the sound. This is especially useful when learning FM.

There is a random voice generation function, too. You select parameters for randomisation and then specify the amount by which they will be randomised as a percentage.

You can Undo a randomisation and

have lots of fun repeatedly randomising a voice to see if it changes for the better. Sometimes it will, but often it won't. You can hear the current voice at any time by pressing the right mouse button.

The Performance Editor lists the instruments and their parameters, and like the Voice Editor all parameters are displayed at once. It also has its own randomise function – a surprise orchestration every time.

Finally we mustn't forget the Systems Screen, in which you can set default parameters for Midi merge options, program

Turn to Page 42 ►

The image displays two screenshots of the TX Editor software. The top screenshot is the 'main screen' showing a menu of voices (Grand Piano, LoLine01Z, etc.) and a list of instruments (MylonGuit, etc.). The bottom screenshot is the 'TX Voice Editor screen' showing a detailed view of a voice's parameters, including envelope, scale, sens, and tuning, with a graphic display of the envelope.

TX Editor main screen

TX Voice Editor screen

TX Performance Editor screen

◀ From Page 41

change filters and system exclusive channels.

You can also alter the colours. The TX81Z Systems Screen has even more frills pertaining to various controllers. Finally, the disc holds a desktop accessory which allows you to load a voice bank into your synth from another program.

Voice Editors are useful for three main reasons – to help create new sounds, to organise those sounds into banks and to store them on disc. Voice Editor is extremely useful for the last feature alone. It's far more convenient and reliable than storage on cassette and far cheaper than

ram cartridges.

As for the other two benefits, 4-Op Deluxe acquits itself extremely well on both counts, although it does take a little getting into initially.

The manual is a full 50 pages long and you've really got to read it at least once. If you don't know an algorithm from an Afro-Cuban rhythm or an operator from a telephone answering service, you've got a bit of catching up to do.

But even on a basic level you can organise voices into banks, store them on disc and create new ones through randomisation without knowing anything about FM. And just imagine what you'll be able to create if you do!

FACT FILE

Product: Dr T's 4-Op Deluxe

Price: £99.00

Supplier: MCMXCIX, 9 Hatton Street, London NW8.

Tel: 01-724 4104/01-258 3454.

POINTS FOR:

Extremely powerful and fully comprehensive voice editor.

AGAINST:

Functional screens, takes a little getting into.

New on the PD scene

AS promised last time, this month we have details of a fully-working 32-track sequencer plus some programs of special interest to CZ and DX synth owners.

One problem with public domain software is that many programs may get bundled on to one disc and as they get passed around demonstration files – and instructions – may be added or disappear. The files can also change name, and as you scan PD lists it's not always easy to know if a description refers to a program you already have.

For that reason I'll describe the programs first and then list some sources. The sequencer in question was written by Canadian Geoff Waddington and is probably the most common and well-known in the public domain.

The first thing you do with a PD disc is read the DOC files – don't you? The documentation with the sequencer is sparse. It says it works "like you think it should". Guess what? It doesn't!

It has 32 tracks and operation is based around tape recorder controls with play, record and fast forward and rewind icons.

You should be able to suss out most of it – including some of the quirky bits – although if you are a complete novice you could be in for a bit of a struggle.

It doesn't pose a threat to any of the commercial budget-priced sequencers, but if you want to see what sequencing is all about before spending your cash, this is certainly worth getting.

Most versions come with nine demonstration files. Anyone should be able to load and play these, although you may have to fast rewind some files after loading.

Also in the public domain are a couple of CZ and DX randomisation programs. They create new voices by randomising the synths' parameters and although you have some control over the weirdness

factor their facilities are rather simple. They are generally well documented and easy to use although you're unlikely to create any definitive sounds – at least not without a little participation.

There are separate programs for Casio's CZ-101/1000 and Yamaha's DX100. A lot of sample voices are included, and you can save voices to disc too, so it can double as a librarian. The source code is included on most discs should you want to adapt the programs.

Also for CZ owners is a Librarian program written by Chuck White and available in several incarnations. It can help load and save voices to and from disc. It's written in Forth and it can be a bit of a pain accessing the voices. If you get the name wrong it tends to bomb out.

These programs are fairly common and should be available from most PD distributors.

The sequencer is available on ST UK's Music 4 disc. The ST UK Music 5 disc holds the CZ and DX Randomisers plus a DX100 Voice Editor written in Fast Basic. Softville's Music 2 disc contains the CZ Chuck White program plus a CZ voice manager by Jim Glish and some miscellaneous sound programs.

ST UK's Music 2 has those two programs plus a simple synthesiser in which you play the ST's keyboard. There's an Intersect demonstration, six songs which play over Midi and a silly program which lets you play the ST's sound chip from a Midi keyboard. The sequencer can also be found on SOS disc 40, while SOS disc 41 contains the CZ randomiser.

The ST Club's Midi 6 disc contains the sequencer plus two folders of other song files. One has nine files for Activisions' Music Studio, the other 11 files with the suffix MD2 which I haven't managed to tie up with anything. Any ideas?

The ST Club disc Midi 5 provides the Chuck White CZ Librarian, an Intersect Orchestrator demonstration, the Midi to

ST chip program and a program to convert Amiga Music Studio files to ST format. Midi 8 also has the Chuck White CZ Librarian along with four folders of sounds.

SWSL's Disc 39 has the Chuck White Casio CZ Librarian plus miscellaneous sounds programs including a Midi Demonstration containing 6 songs. This draws a keyboard on screen and the keys light up as tunes play.

The SWSL Disc 40 also contains the CZ Librarian plus lots of sound files and a sound editor for the ST's sound chip called Piano – a very confusing name in the PD music sector – written by Scott Huskey. Lots of instructions are included.

Both Softville's Music 5 disc and SWSL's Disc 94 have the CZ and DX randomisation programs and the Canadian Sequencer but no song files.

SOS specialises in nothing but music programs and its discs are £7 each. Other PD sources charge between £2 and £4.

FACT FILE

ST UK, 1 Bartholomew Road, Bishops Stortford, Hertfordshire CM23 3TP.

Softville PD Service, 55 Highfield Avenue, Waterlooville, Hampshire PO7 7PY.
Tel: 0705 266509.

SOS Software, PO Box 30, St Ives, Cambridgeshire PE17 4XQ.
Tel: 0480 61244.

ST Club, 9 Sutton Place, 49 Stoney Street, Nottingham NG1 1LX.
Tel: 0602 410241.

The South West Software Library, PO Box 562, Wimborne, Dorset BH21 2YD.

June 1989 Atari ST User 43



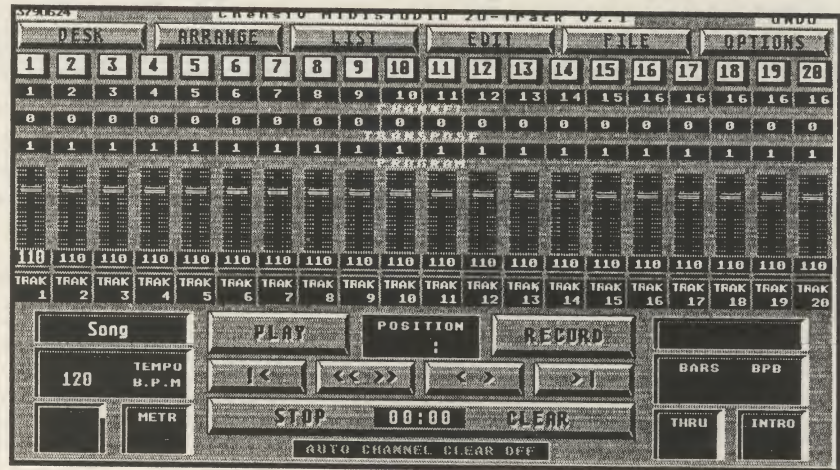
LADBROKE COMPUTING INTERNATIONAL



Midistudio £99.99

Midistudio is a 20 track Midi Music Studio. This Midi software package is a realistically priced introduction to Midi music processing and includes the following features.

20 tracks each assignable one of 16 midi channels, each track can be transposed up or down 2 octaves, the main screen features full tape deck controls with individual volume sliders for each track, note editing facilities including editing of pitch, octave, duration and velocity, plus full midi controller editing (pitch bend, mod wheel, etc.). Full control over phrases is offered through Quantizing, transposing, and phrase arrangement software pages. The arrangement facilities allow moving and copying phrases on any of the 20 tracks. The package is easy to use and is a strong competitor with Pro 24.



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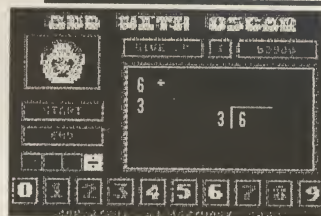


The Image Scanner is a peripheral for the ST which can provide high quality graphics digitising for a tenth of the cost of other digitisers. This simple unit plugs into the cartridge port of the ST and accepts scanned information via optical cables which fix easily to the head of any printer. Scanned images can be saved in raw data, Degas and Neochrome formats. The Software supports scanning resolutions of 75,150,216,300,360 and 1000 dots per inch horizontally. An example disk is available which contains a slide show of images scanned with this product. The cost of this disk is £3.99, £2.00 of which is redeemable on purchase of a scanner.

Add With Oscar £12.99

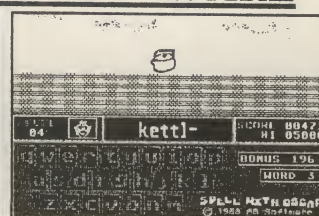
Add with Oscar is a fully mouse controlled educational game with full colour screens and sound for teaching addition, subtraction, multiplication and division to children. This program has selectable difficulty levels and a Hi-Score table.

EDUCATIONAL SOFTWARE



Spell With Oscar £12.99

Spell with Oscar is a game which teaches spelling, keyboard skills and motor coordination. Pictures of objects move smoothly across the screen and the pupil should spell the name of the object while Oscar checks for mistakes. Spell also incorporates selectable difficulty levels and a Hi-score table. Extra data disks £6.99

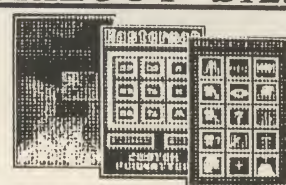


Quick List Plus is a utility that compiles a directory of your disks. Sort on disk or name, reads any drive, including hard drive. Printer output for hard copy of databases.

Mastermat is a formatter that optimises disk space, allows non standard sector and track formats/ fast read format.

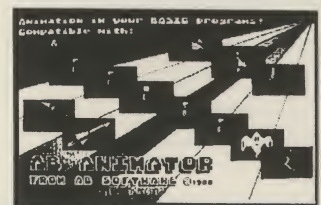
Picstrip is a utility that captures all or part of a picture file for use in Basic programs, supports GFA, FAST, HISOFT and ST Basics and is Degas, Neochrome and AB Animator compatible.

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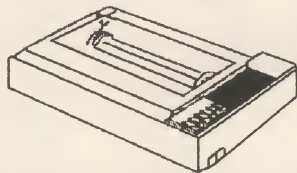
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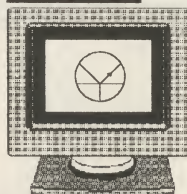
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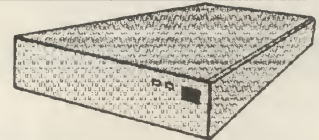
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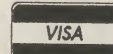
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POWER Computing is Toni Ianiri and Toni Ianiri is Power Computing. That simple metaphor sums up the fastest growing ST hardware producer and distributor in the UK. Italian born Danny Devito lookalike Toni, is managing director of a company that has come from almost nowhere to dominate the ST hardware market in just over a year.

Based in bustling but small offices in a smart back street in Bedford is the heart of Toni's dream. Power Computing is the mother company which incorporates Triangle Disc Drives, Eidersoft Software and Power House Direct Distribution.

Originally a motor mechanic with Lancia and Mercedes, Toni entered the micro industry in early 1984. He was one of the three directors of Sandy, a company that supported the Sinclair QL micro and cornered this cultish market by designing and selling a superb PCB disc drive interface – for which there is still a demand.

Toni then opened his own operation in Bedford, initially called Garfield House, then in turn Power House Computing. As 100 per cent owner of Power Computing – notice again the slight name change – he is ably supported by his lieutenant, general manager Ken Browning.

Now concentrating as much on the export market to Italy, Germany, Sweden and the USA as on the flourishing home market, Power Computing has gone from strength to strength. A staff of six people creating a two to three million pound

The Italian Job

Toni Ianiri makes an offer Nic Outterside simply can't refuse

turnover in the first year is indeed a remarkable success story.

Toni shows great pride in Triangle which utilising the very best that Sony and NEC can provide, produces a complete range of "Top of the Tree" disc drives for the ST. With prices starting at £90 and rising to £999 the range includes slim and smartly boxed 5.25in, 3.5in, disc combinations and hard drives. All drives are assembled in the UK with state of the art design work carried out either in this country or in Italy.

Each Triangle drive goes through quality testing and comes with track counter, ergonomic on/off switches, built-in PSU, games and utility software plus a comprehensive user manual. The Amiga drives are even designed to include anti-virus cache circuitry!

I have yet to see or use smarter looking or better designed disc drives with my

ST. I noticed that each one also has a built in PCB with a number of jumpers, so that if ever the worst should occur and your drive should fail, a new one – of a different make if need be – can be installed with complete compatibility guaranteed.

Power Computing also produces a range of bargain disc drives with price points from £75 to £90. Again only the best Sony and NEC basic drives are used, but with back switches and more standard casing these are retailed under the Power badge rather than the exclusive Triangle one.

Power House Direct acts as a

Turn to Page 48 ►

Ken Browning (left) and assistant examine a new 'triangle multi-drive



◀ From Page 47

distributor/retailer to sell Power and third party products direct to the public and to a network of shop-based dealers.

Toni says that he will not deal with dodgy firms which operate from back bedrooms and will only distribute his products to reputable dealers who keep a credit account in good order. This protects his customers and the good name of Power Computing.

Software has until now been a minor concern of Toni Ianiri. However, a new limb of Power Computing is recently-acquired Eidersoft. This company already had a track record of producing top quality serious software for the ST including the best selling Quantum Paint.

The Eidersoft label will now be used on all future software products put out by Toni's company. New and coming products will include:

- Pic Works, a video printing and graphics utility priced at £24.95.
- An excellent battery backed successor to Computer Concepts' Back Pack called Desk Cart. This plug-in cartridge includes a whole host of useful desk accessories and should hit the market at £69.95.
- Also on the release schedule is Mouse

Music designed by Chris Allen – the man responsible for the Mono Pro-Sound Designer. This Sampling and Midi Sequencer will be released at a bargain £199.

Power is the almost sole distributor of the best selling PC-Ditto and Megamax's Laser C. Added to this stable will be the soon to be released PC-Ditto 2, an Avant-Garde accelerator hardware add-on.

In addition Toni promises that Power Computing will continue to sell and distribute in larger numbers high quality serious applications – embracing languages, art and music – such as HiSoft Basic, Devpac, Spectrum 512 and Degas Elite as well as a Top 10 of selected serious games.

Other popular lines are the Power complete hardware/software systems. These include the excellent Complete Professional CAD system which incorporates a 1040STFM, monochrome monitor, Campus CAD and a Roland DX80 A3 Plotter all for less than £1,500 and the Complete Basic Music pack which includes a 1040STFM, monochrome monitor, second disc drive, Mouse Music, 5-Oct Keyboard and Master Tracks Junior.

What of the future for this bubbling company? Toni and Ken see it partly in

terms of cashing in on the video/micro connection. Though this has firmer foundations with the Amiga, they both reckon that the ST would flourish with more digitiser and VT editing support.

They can see a future for connecting micro software technology to video recorders to change the face of remote control recording and playing.

Also on the masterplan are moves to develop budget priced TV satellite dishes. Already developed is a complete dish package which will retail at £499.

Another hardware development involves a flexible ram upgrade board for the ST to allow an ST to be upgraded in 128k stages. This should be available later this year.

Within Power Computing major developments are underway and envisaged for the near future. They include current expansions and refurbishments to the premises to include a technical support department, display/shop areas, packaging plant and extended warehousing.

Technically already a millionaire, Toni relaxes in the "big family" Italian heritage and says he envisages a long and successful future in the micro industry.

He has conducted a true "Italian Job" and which ever way the wind blows, promises to come up smiling.



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Just the medicine for your ST

DESPITE widespread publicity ST viruses are still fairly rare. In general, commercial software is free of these destructive little demons and the most likely place you'll catch one is in the public domain.

To cure and prevent viral infection of your floppy discs Excel has produced a clever Virus Destruction Utility. This program will seek out and destroy all known ST viruses.

In the January issue we examined these viruses – revealing that they are simple programs developed by the warped mind of some machine code programmer who had a grudge against the rest of the ST fraternity.

There are basically two types – the boot sector and link virus. The former is a machine code program that occupies the boot sector of the disc and is executed whenever the ST is booted up by either switching on or pressing the reset button.

Games make legal use of this boot facility to load and run programs automatically without having to click on them from the desktop. Viruses abuse this feature by using it to install themselves in memory.

The link virus tags itself on to the end of an executable program. Whenever the program is run the virus program is loaded and run as well. It then installs itself in memory like the boot sector one.

Whenever you read or write to a disc the virus copies itself to that disc and so replicates itself.

Usually, the virus performs some destructive action at some point, like corrupting your disc or the files on it. It may wipe out anything from a day's to a month's work. If you haven't got backups the programs or data may be lost forever.

Virus Destruction Utility (VDU) is a menu-driven program that you click on from the desktop. The main menu offers the choice of checking a disc for a virus, repairing one that has become corrupted, printing out VDU information or quitting the program.

The first item takes you through a series of menus where you specify which drive to use and the type of virus to look for. Boot sector viruses can be destroyed if found and the disc immunised – an anti-virus tells you if it finds a disc that has become infected.

Opting to search for link viruses brings

Roland Waddilove tries a utility to find and destroy viruses

up a standard Gem file selector. After entering the file to check you are told whether a virus has been detected.

You can quite easily destroy boot sector viruses without going to the expense of buying a virus killer. Simply use a public domain sector editor to zero the first two bytes on the disc. However, link viruses are a different kettle of fish so VDU still has its uses.

The documentation is comprehensive, consisting of a text file stored on the disc. The software is well written and worked fine on the deliberately infected discs I tried it with. If you are troubled by this hi-tech disease then Excel's Virus Destruction Utility is recommended.



FACT FILE

Product: Virus Destruction Utility
Price: £6.95
Supplier: Excel, PO Box 159, Stockport SK2 6HN.
Tel: 061-456 9587

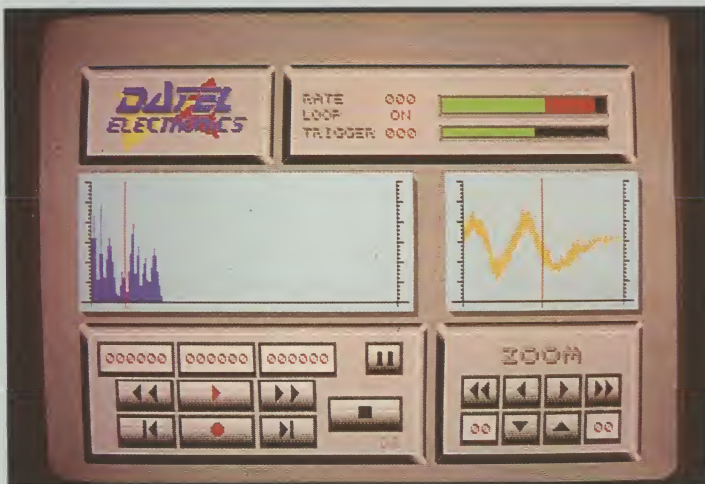
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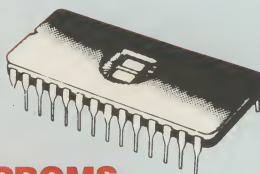
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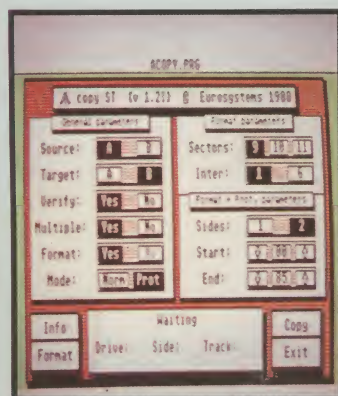
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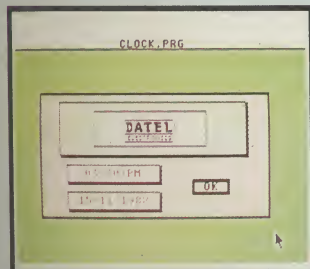
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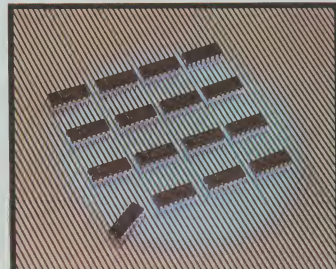
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Stephen Murgan views the state of the art in ST flight simulation

READY FOR TAKEOFF



Flight Simulator II: Uses a real word database for terrain

WHILE flying is enjoyable it is also potentially dangerous – and expensive for the beginner to learn the art. One way round this is to load a flight simulator on your ST. And don't feel you are cheating as most airlines use purpose-built simulators to train pilots without tying up valuable aircraft time.

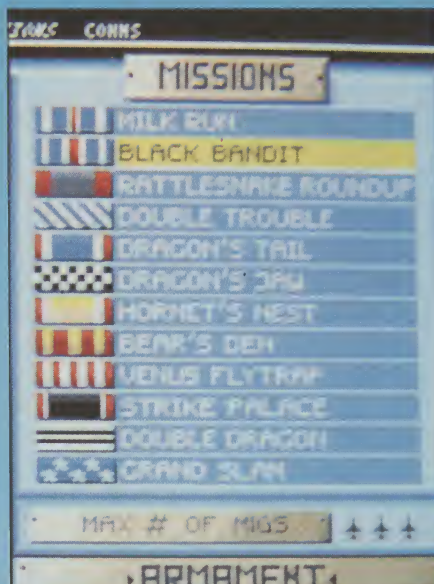
The lucky few, fortunate enough to try out a multi-million pound flight simulator will know how horrifyingly realistic they can be.

There is a tale of a pilot under training who flew a simulated flight from London to Chicago, experienced an engine failure on final approach and smashed the plane into the tarmac. The pilot staggered out of the simulator, threw-up and fell down the stairs.

Some of the best simulators are so good that the CAA in Britain and the FAA in the States allow pilots to log practice hours using them while cross-training from one aircraft type to another.

In addition, there is at least one flight simulation running on IBM compatible PCs on which the FAA allows pilots under training to log flying hours towards a pilot's licence.

The age of home computing has



Making pre-flight decisions in Falcon

brought with it a more realistic option – affordable flight simulator programs. While not in the same league as the big simulators, these allow aviation enthusiasts to indulge themselves in the joys of flight at their own leisure in the comfort of their sitting room or study.

Several different types of flight simulator are available on the ST, most of which cost a lot less than a single flying lesson. I aim here to look at the qualities that make ST flight simulators realistic, and to compare the existing ones on the market.

A team developing a simulator package first has to define what it wants to do.

This may sound obvious, but many design decisions must be made before coding is started.

For instance, will the simulator be aimed primarily at reality or playability? A good example of the former type is Flight Simulator II (FSII) which uses a real-world database, complete with landmarks, rivers, radio beacons and navigation systems. Wind, clouds, seasons and day/night flying are all included within the simulator.

While others such as Skychase and Strike Force Harrier are more concerned with air-to-air combat, so the navigational aspects are less developed.

As a general rule, the more realistic a simulation, the more difficult it is to master and the less playable it becomes. So in some cases, such as F-15 Strike Eagle, it is necessary to compromise in some way in order to make the simulation easier and more interesting to use.

These decisions will target the program at a particular type of user and will exert a great deal of influence over final price points and sales figures.

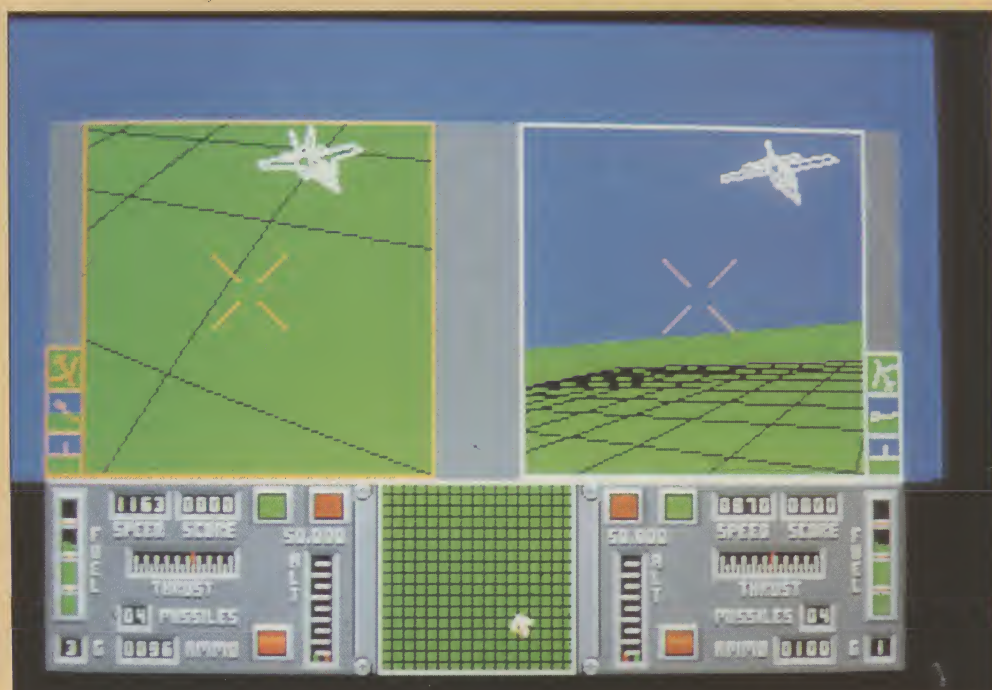
So what makes a good flight simulation? The main quality points are usually in the cockpit graphics which have two main components:

- Speed of response: The screen display must be updated quickly and smoothly enough to fool the eye into an illusion of continuous motion – look at the beautiful movement in Falcon.
- Detail: The view from the cockpit must be realistic enough to convey the impres-

Turn to Page 54 ►



base for its scenarios



Skychase is fast but uses wireframe graphics

◀ From Page 53

sion of reality, depth and perspective. Good use of colour, texture and shading can enhance this three dimensional quality.

Some flight simulators such as FSII have sufficient detail to convey an excellent impression of reality, but the screen is not updated quickly enough, while others such as Skychase sacrifice detail for speed to the point of using wireframe graphics.

Gunship is a reasonable compromise, but is a helicopter simulation and not a fixed-wing aircraft type, so it has different handling characteristics.

Falcon is a new simulation of the General Dynamics' F-16 fighter. It is, at least at the moment, state of the art as far as ST flight simulators go.

One of the major points in its favour is that it allows the aircraft's handling characteristics to become more realistic as the pilot gains experience. And the scrolling landscape has to be seen to be believed.

Doubtless a better simulation in the shape of the Microprose stunner F-19 Stealth Fighter will soon be available for the ST. That's the beauty of flight simulation – there's always a better one just around the corner.

One other quality that a flight simulator should have, and which is very difficult to implement on the ST, is "feel". One of the major plus points of my old BBC Micro was the fact that it had an analogue port.

The difference between an analogue joystick and a digital one has to be experienced to be fully appreciated. The mouse is a reasonable substitute, but the lack of a self-centring mechanism means additional pilot workload.

A simulator with an analogue joystick would solve this problem, but the necessary supplementary hardware would push-up the overall cost of such a package prohibitively.

There is quite a wide range of choice for the ST user wishing to buy a flight



Gunship: A helicopter simulation that achieves a fine balance

simulator program. If you wish to fly about shooting and bombing things you would, for instance, be ill advised to go for FSII, even though it has a World War I ace mode.

While if you are into flight management tasks such as navigation and instrument flying you may be similarly disappointed in something like F-15 Strike Eagle or Falcon. Perhaps a ground control simulation such as Kennedy Approach may be more up your street.

In the final analysis, the watchword has got to be try before you buy, which is of course, true for any software. Detailed reviews such as those in *Atari ST User* are also very useful, as are recommendations of others, but remember you may not be looking for the same things as those who are doing the recommending.



FACT FILE

Product: F-15 Strike Eagle

Price: £24.95

Product: Gun Ship

Price: £24.95

Supplier: Microprose, 2 Market Place, Tetbury, Gloucestershire GL8 8DA.

Tel: 0666 54326

Product: Falcon

Price: £29.95

Product: Skychase

Price: £19.95

Product: Spitfire 40

Price: £24.99

Product: Strike Force Harrier

Price: £24.99

Supplier: Mirrorsoft, Irwin House, 118 Southwark Street, London SE1 OSW.

Tel: 01-928 1454

Product: Flight Simulator II

Price: £49.95

Supplier: Sublogic, Software Express, 514-516 Alum Rock Road, Alum Rock, Birmingham B8 3HX.

Tel: 021-328 3585

Product: F-16 Combat Pilot

Price: £24.95

Supplier: Digital Integration, Watchmoor Trade Centre, Watchmoor Road, Camberley, Surrey GU15 3AJ.

Tel: 0276 684959

Product: Skyfox

Price: £24.95

Supplier: Ariolasoft, 68 Long Acre, Covent Garden, London WC2E 9JH.

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Two into one will go!

ONE major headache for ST owners is that two completely different monitors are required to cope with the three different screen resolutions. In high resolution the computer generates 70 picture frames a second, whereas in medium and low resolution it slows down to 50 frames.

The result of trying to display medium or low resolution on an Atari monochrome monitor or vice versa may be to damage the monitor's electronics. You won't get a picture, that's for sure.

The IBM PC family faces the same problem. A number of graphics adaptors in use are mostly incompatible with each other. For instance, an EGA monitor will be unable to display some of the higher VGA resolutions.

However, a special type of monitor called a multisync has recently been developed which can detect the different types of adaptors and display the picture correctly.

An upshot of this display flexibility is that a multisync monitor is also quite capable of being used with the ST in any of its three screen resolutions. The problem is simply one of cost. A colour multisync monitor retails for more than £300 and this high expense has put many prospective buyers off looking into this option.

Happily this situation has changed with

William Hern tries a superb NEC grey scale Multisync monitor

the introduction of the Multisync GS by NEC, the company which was the pioneer of this kind of monitor. The GS is a monochrome monitor (the initials stand for Grey Scale) and at a price of around £200, this is much nearer many people's budgets and costs not much more than an Atari SM monitor.

The monitor is quite a bit larger than its Atari counterparts and is much more businesslike in appearance. The larger screen on the GS was definitely flatter than those found in the SMs and as a result there was less reflection and glare.

I tested the monitor with a large variety of software of all kinds – games, word processors and art programs for example – and all ran perfectly. The loss of colour was not a serious disadvantage and I was able to see everything on the screen with little difficulty.

When displaying in high resolution I did feel that the GS display was not quite as good as the Atari SM series. I could not get a similar level of brightness to that on the SM's without the characters blurring.

However, the picture was still very good and certainly usable.

Low and medium resolution displays were as good as any I have seen. The increased picture definition more than made up for the loss of colour.

Horizontal and vertical shift, brightness, contrast and vertical size controls are included. However, I found their placing under a panel on the top of the monitor alongside the on/off switch to be rather inconvenient. I had to strain to reach the controls from a sitting position and it was difficult to find the right one. I would have preferred them below the screen.

I appreciated the vertical size control when using medium resolution as the display can be slightly squashed to get rid of the normal stretched appearance of the characters.

The manual that accompanies the GS at first seems impressively long, but as it contains versions for five European languages, the amount of information it contains is really quite small. Also it deals solely with connecting the GS to an IBM PC, so the ST user will find little of use. A knowledgeable dealer will be much more help.

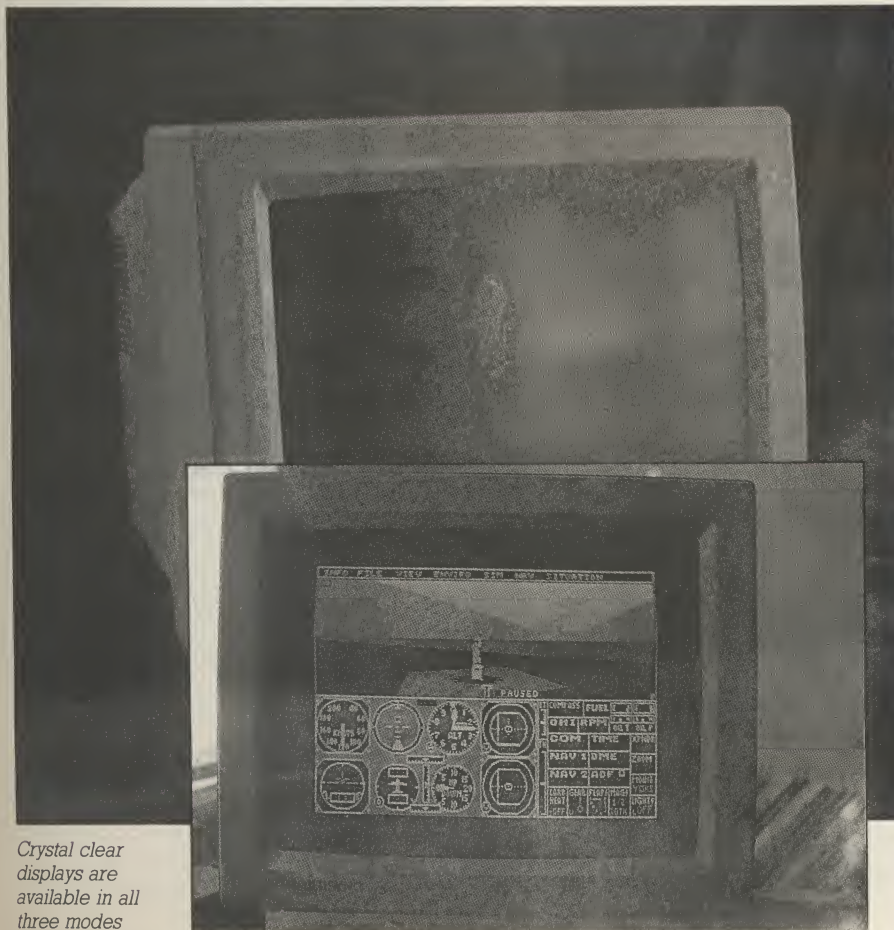
One disadvantage of the GS is that it has no speaker. You'll have to connect the sound output from the ST's monitor socket to either a hi-fi system or to a set of personal headphones. Either way, the sound quality is better than that from an internal loudspeaker.

A special cable, is needed to connect the monitor to the ST. This must have an integral switch so you can change between low/medium and high resolution.

People thinking of buying the standard ST monochrome monitor should look seriously at the GS.

For very little extra money you will get a high resolution display nearly as good as the Atari monitor, plus the ability to use low and medium screen modes.

The overall quality of the GS truly makes it a monitor for all resolutions.



Crystal clear displays are available in all three modes

FACT FILE

Product: NEC Multisync GS

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Commander Purder reports on his epic space journey from BBC Micro to Atari ST

THE cult game Elite was almost a consuming passion of mine in its original BBC Micro version, so when it was recently released for the Atari ST I used it as the excuse to buy myself a 520STFM.

It's always fascinating to make comparisons when two versions of an excellent game are available, and in this case readers who have treated themselves to the ST version might be interested in my experiences – particularly if they've encountered problems.

As Roland Waddilove pointed out in his review of the game in the November 1988 issue of *Atari ST User*, Elite is intensely addictive, but you've got to be able to make progress first. For me docking was the major problem, and I found it much

Elite voyager

harder to dock manually on the ST version of Elite than I ever did when playing on the BBC Micro.

This I put down partly to the different keyboard response and partly to the need for a more precise line-up with the entrance to the space station.

It's best to ignore what the manual has to say about docking procedures – the bit about a dead slow approach, anyway. If you are a newcomer to Elite, spend time at Lave launching and then docking again. If you launch, fly in a straight line away from the station for a while and then turn right around. You shouldn't then have too much trouble in lining up properly

with the entrance.

Next you should approach the entrance, but stop a little way short. It's nice to see that other ships launching from the space station while you are approaching take evasive action. In the BBC Micro version they smash into you, and you are at once given Fugitive status, which is decidedly unhealthy.

Get your spin to match that of the space station as best you can, and make sure that you are roughly centred on the entrance, then accelerate to full speed.

Nine times out of 10, you'll find that you've managed to dock safely. I tried for ages using the dead slow approach and

wrecked the ship every time. Since I am Elite some 10 times over, I wasn't amused.

I have to admit that the tenth time might be unfortunate. I smashed my Cobra once, and the game also hung up on me once, displaying the message Trap and a string of hex code.

I certainly changed the order in which I went shopping for equipment as a result, and placed the docking computer above the ECM system in priority.

When you finally venture away from Lave and start trading, I suggest that you buy a ton of furs and spend the balance of your money on food. Head for Zaonce where a profit is guaranteed if you can dock safely.

Try to approach the system in such a way that, once you are in the safe zone, you have the planet on your right and the tiny grey dot of the space station to your left, each more or less level with the horizontal line of the laser sight.

When the space station is registering on your close range radar screen, switch your viewing screen from the front to the left and wait for it to appear. With luck you should be able to spot the entrance and have a rough idea of how much manoeuvring is needed for you to line up.

Next, switch back to the front screen and stop dead. Rotate your ship until the front of the space station is seen in your laser sight, approach and carry out what you've practised at Lave – and keep your fingers crossed.

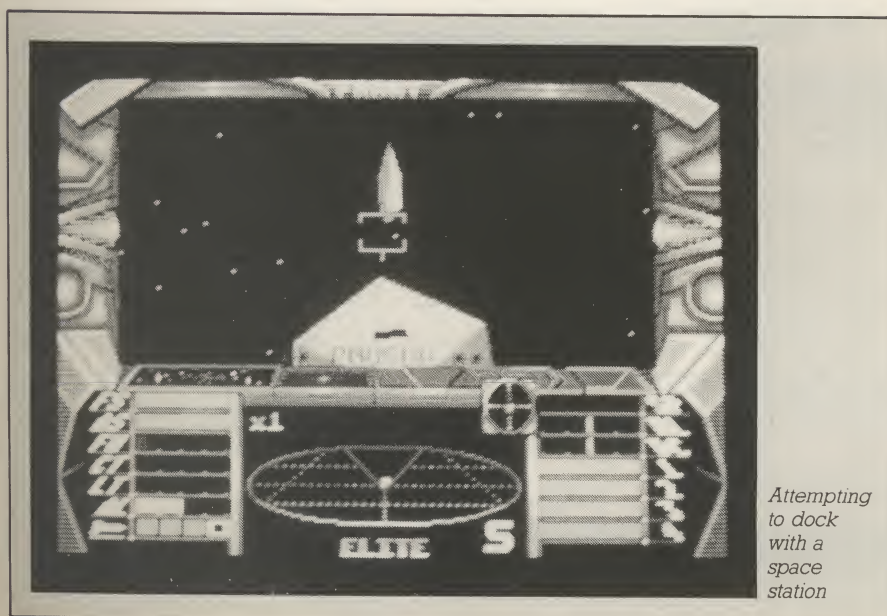
If you can't see the front entrance don't despair. What you should do now is to

ARCADE CORNER

ARCADE CORNER is an occasional feature where avid games players can help their fellow readers. It's a place where we publish maps, complete solutions, cheat pokes and hints and tips.

If you have anything about your favourite arcade game that you feel would be of interest send it to:

Arcade Corner, Atari ST User, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.



Attempting to dock with a space station

Turn to Page 60 ►

◀ From Page 59

approach the space station until you are fairly close. Since the docking entrance always faces the planet, you should be able to work out where the planet is from the way the space station is spinning.

Rotate until it is in your front screen and head for it, checking your rear screen from time to time until you have the space station a safe distance away and can see the docking entrance. Now stop, turn around and proceed as before.

Always save your position when you've made a successful docking attempt. At Zaonce you should first sell your cargo, next refuel your ship and only then think about buying cargo. You'd look daft with a full cargo hold, empty fuel tanks and no more money.

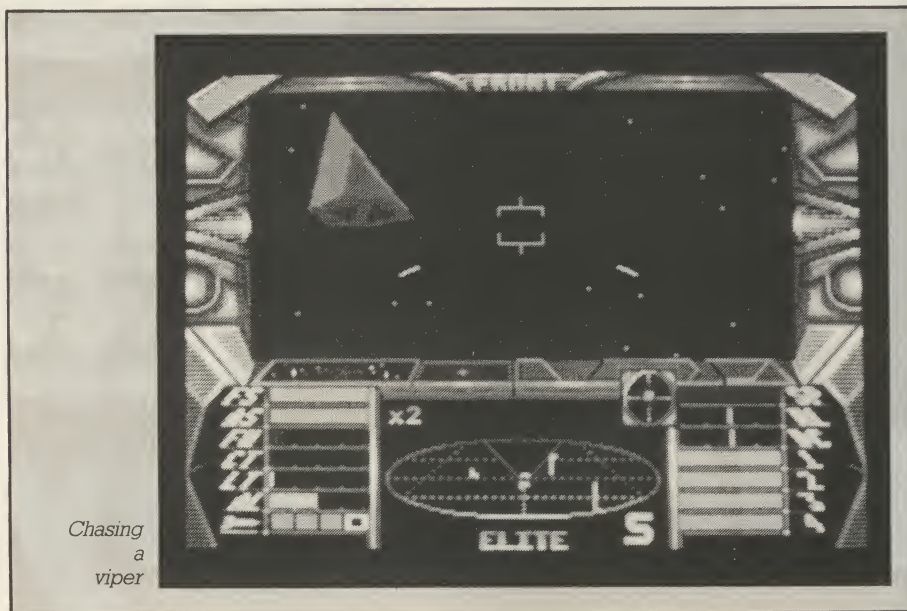
In fact at Zaonce a ton of computers and a ton of machinery are all you're likely to be able to afford. Take them to Isinor and trade between that system and Ensoreus while you amass enough money to buy all the equipment you want.

You are bound to be attacked quite early on in the game, and here I advise stopping your ship dead to provide a stable platform for your laser fire. Try to

polish the enemy off while it is as far distant as possible.

Again, tactics here differ from the BBC Micro. I always used to advise trying to destroy the more distant pirates when you are attacked by more than one ship.

With the ST version that would be disastrous, because the enemy fire is much more punishing – you must concentrate your fire on whichever pirate is closest, and only then turn your attention to the others.



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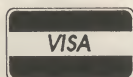
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David McLachlan makes music with STOS and shows how to write a bat and ball game



Play it again Sam

WELCOME once again to our regular STOS programming feature where we take a look at various aspects of this game creation package. This month we are going to examine the PLAY command and see how to use the mouse pointer as a sprite. To this end I've written a small bat'n'ball game – nothing too complex, just a simple squash session.

It features a ball bouncing around an area enclosed on three sides. Using the mouse to control a bat you have to stop the ball flying off the bottom of the screen. To add a little variety there's a magnet in the centre of the screen. If the ball gets too close it will be deflected and fly off in another direction.

The program uses the PLAY command to make one of two noises depending on whether the ball hits a wall or the bat. The syntax for the command is:

PLAY v,p,d

where *v* is a voice from one to three, *p* is the pitch – any number between 0 and 96 and *d* is the duration in 50ths of a second.

Contrary to what you might expect, what this command actually does is to play the sound for longer than the duration. However, if another sound is executed that is played immediately, otherwise

the original sound keeps on going.

Type the following at the OK prompt in STOS:

**VOLUME 1,15
PLAY 1,37,50**

This will produce a middle C on voice 1 at volume 15. The program will wait for a second before you can assign another pitch to that voice.

Hand in hand with the PLAY command is VOLUME. The syntax for this is:

VOLUME v,i

where *v* is the voice number between one and three and *i* is the intensity. Before you set this however, use CLICK OFF to turn the key clicking off because this interferes with the PLAY command. CLICK ON re-activates key clicking.

The note played in the last example but

one won't stop because it uses a continuous pure tone. If you want to stop it you have to play another note. Either play one with a pitch of zero or play the original note through an envelope.

An envelope is used to alter the volume of a sound being played. It determines whether the sound gets progressively louder or quieter, repeatedly gets louder and so on. There are 15 types of envelopes available using the command:

ENVEL t,s

The variable *t* is the type of envelope and ranges from 1 to 15 and the second parameter *s* defines the speed at which the envelope affects the sound. To use it in conjunction with the PLAY command the voice you are going to use must have its volume set at 16. Type in and notice the difference between these two lines:

**VOLUME 1,16:ENVEL 10,500:PLAY 1,37,1
VOLUME 1,16:ENVEL 10,5000:PLAY 1,37,1**

Try increasing the speed even more and you will be surprised by the effect produced.

In the game listing this month I use envelope pattern two which starts loud and then trails off to nothing.

The NOISE command produces white noise which is like the hiss you can hear on the television when the station goes off-air. Its syntax is:

NOISE v,p

The first parameter *v* is the voice and *p*

SPRITE INFORMATION FOR USE WITH SQUASH LISTING

You'll need to define six sprites using the sprite editor before you can play this game. The following table describes each sprite's use, its size in pixels and where the hot spot is. These should be saved as a single sprite file and loaded with the Basic program:

| Sprite number | Sprite description | Sprite size | Hot spot coordinate |
|---------------|--------------------|-------------|---------------------|
| 1 | Bat | 48 x 10 | 23,4 |
| 2 | Ball | 16 x 5 | 2,2 |
| 3 | Magnet | 16 x 16 | 7,7 |
| 4 | Brick wall 1 | 16 x 16 | 0,0 |
| 5 | Brick wall 2 | 16 x 16 | 0,0 |
| 6 | Brick wall 3 | 16 x 16 | 0,0 |

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◀ From Page 63

is the pitch, ranging from 1 to 31. You can use this just like the PLAY command. Try it in the last example.

Sprites

STOS claims to be able to display 15 sprites at once. It can in fact, display 16 as the mouse pointer is a sprite too. Although it cannot be controlled by the MOVE, ANIM and SPRITE functions, it can be manipulated and made to act like a sprite using the various mouse commands.

I pointed out in the first article in the April 1989 issue that the mouse pointer is sprite zero.

STOS has three different predefined images for the mouse pointer and you can select any of these using the CHANGE MOUSE command:

CHANGE MOUSE *n*

The number *n* is the image. However, you aren't limited to just these three predefined images. You can change the pointer to any image in the sprite bank.

The type of game written here is much easier to play with a mouse than with a joystick, so the pointer is defined as being the first image in the sprite bank – the bat.

To prevent the pointer – now the bat – from wandering all over the screen LIMIT MOUSE will restrict the pointer to a rectangular area. The syntax looks like this:

LIMIT MOUSE *x1,y1* TO *x2,y2*

The first two coordinates *x1,y1* are the top left and *x2,y2* are the bottom right coordinates of the rectangular area. In the game this command restricts the mouse pointer to a one pixel high strip along the bottom of the screen.

Other commands relating to the mouse pointer include XMOUSE and YMOUSE. These allow you to read the position of the mouse. For example:

x=XMOUSE
y=YMOUSE

The mouse pointer's position can also be set using the same commands but with a slightly different syntax:

XMOUSE=100
YMOUSE=100

This will position the mouse pointer at the coordinate 100,100.

The game listing nests three WHILE ... WEND loops with the bulk of the program between them. The innermost loop is active when the ball is in play.

The ball is controlled by two variables

using Boolean logic. The ball is kept within the boundaries of the screen by reversing either its X or Y direction, depending whether it reaches the sides or the top of the screen. Its direction is also altered when it collides with the bat.

Collisions are detected using the COLLIDE function which was explained in detail last month. When the ball hits something a subroutine is called which uses the XMOUSE command to check where on the bat it has hit. The result of these checks determine at what angle the ball bounces off.

The method used to move the ball is neat and worth remembering. The sprite is put on the screen using its own coordinates plus or minus its direction, depending on what direction the ball is moving.

There's another sprite in the centre of the screen – the magnet. A zone is set up around the sprite and using the ZONE function we test to see whether the ball is near the magnet. A flag is set to indicate true or false. If true then the program calls a subroutine to deflect the ball in a random direction.

An extra flag is set because although the ball might have been sent on another path it still might be within the magnet's zone and we don't want the subroutine called again until the ball has left it.

● Next month a look at using pull-down menus and how to incorporate them into a simple Simon game.

```
10 REM Squash
20 REM By David McLachlan
30 REM (c) Atari St User
40 REM Use the mouse!
50 KEY OFF : CURS OFF : MODE 0
60 PALETTE $0,$511,$226,$337,$447,$3
33,$555,$777,$700,$600,$400,$222,$115
70 FOR l=0 TO 19 : SPRITE 1,l*16+1,0
,5 : UPDATE : PUT SPRITE 1 : NEXT
80 PEN 7
90 again$="Y"
100 WHILE again$="Y"
110 VOLUME 1,16 : VOLUME 2,16 : VOLUM
E 3,16 : ENVEL 2,3000
120 CHANGE MOUSE 4
130 LIMIT MOUSE 23,190 TO 295,190
140 SET ZONE 1,144,84 TO 176,116
150 lives=3 : sc=0
160 FOR l=0 TO 19 : SPRITE 1,l*16+1,0
,5 : UPDATE : PUT SPRITE 1 : NEXT
170 FOR l=1 TO 11 : SPRITE 1,l*16,4
: UPDATE : PUT SPRITE 1 : SPRITE 1,30
4,l*16,6 : UPDATE : PUT SPRITE 1 : NEX
T
180 REMbar 0,0 TO 12,199 : bar 0,0 TO
319,12 : bar 306,0 TO 319,199
190 LOCATE 5,0 : PRINT "Score:";sc :
LOCATE 27,0 : PRINT "Lives:";lives
200 SPRITE 2,160,100,3
210 WHILE lives>0
220 xd=2 : yd=-2
230 SPRITE 1,240,100,2 : UPDATE
```

```
240 LOCATE 0,9 : CENTRE "Get Ready "
: WAIT 25
250 LOCATE 0,9 : CENTRE "Get Steady"
: WAIT 25
260 LOCATE 19,9 : CENTRE " 60 "
: WAIT 25
270 LOCATE 0,9 : CENTRE " "
280 TIMER=0
290 WHILE Y SPRITE(1)<200
300 GOSUB 640
310 c1=COLLIDE(0,24,5)
320 c2=ZONE(1) : IF c2=0 THEN f=0
330 IF c1=2 THEN yd=-yd : GOSUB 530
340 IF c2=1 THEN GOSUB 480
350 IF X SPRITE(1)<16 OR X SPRITE(1)>
304 THEN xd=-xd : PLAY 37,2
360 IF Y SPRITE(1)<16 THEN yd=-yd : P
LAY 37,2
370 IF TIMER>1000 THEN IF yd<0 THEN D
EC yd : TIMER=0 ELSE INC yd : TIMER=0
380 WEND
390 DEC lives : LOCATE 27,0 : PRINT "
Lives:";lives
400 WEND
410 CLS : LOCATE 0,9 : CENTRE "Game 0
ver"
420 sc$="Final Score"+STR$(sc) : LOCA
TE 0,11 : CENTRE sc$
430 LOCATE 0,13 : CENTRE "Play again
(Y/N)?"
440 again$="" : WHILE again$="" : aga
in$=UPPER$(INKEY$) : WEND
```

```
450 CLS
460 WEND
470 END
480 ry=RND(2) : f=1
490 IF xd<0 AND f=1 THEN DEC xd
500 IF xd>0 AND f=1 THEN INC xd
510 IF ry=1 AND f=1 THEN yd=-yd
520 RETURN
530 PLAY 1,37,0 : PLAY 2,41,0 : PLAY
3,34,1
540 sc=sc+10*ABS(yd) : LOCATE 5,0 : P
RINT "Score:";sc
550 IF X SPRITE(1)<X MOUSE-16 AND xd<
0 THEN xd=4 : GOSUB 640 : RETURN
560 IF X SPRITE(1)<X MOUSE-16 AND xd>
0 THEN xd=3 : GOSUB 640 : RETURN
570 IF X SPRITE(1)>X MOUSE+16 AND xd>
0 THEN xd=-4 : GOSUB 640 : RETURN
580 IF X SPRITE(1)>X MOUSE+16 AND xd<
0 THEN xd=-3 : GOSUB 640 : RETURN
590 IF X SPRITE(1)<X MOUSE-8 AND xd<0
THEN xd=-2 : GOSUB 640 : RETURN
600 IF X SPRITE(1)<X MOUSE-8 AND xd>0
THEN xd=2 : GOSUB 640 : RETURN
610 IF X SPRITE(1)>X MOUSE+8 AND xd>0
THEN xd=2 : GOSUB 640 : RETURN
620 IF X SPRITE(1)>X MOUSE+8 AND xd<0
THEN xd=-2 : GOSUB 640 : RETURN
630 RETURN
640 SPRITE 1,X SPRITE(1)-xd,Y SPRITE(
1)-yd,2 : UPDATE : WAIT VBL
650 RETURN
```


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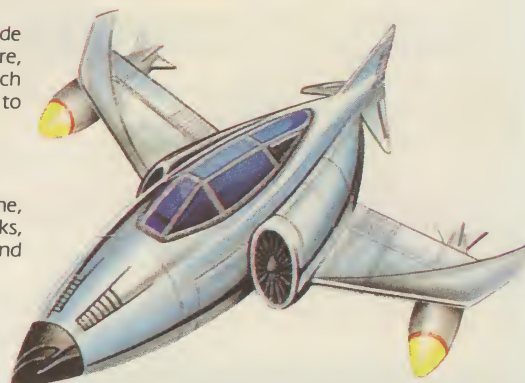


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ST Music

An introduction to music and Midi on the ST

COMING NEXT MONTH

- A closer look at working a database package
- A bumper four pages of music and Midi
- A comprehensive index to **The Complete Atari ST**

THIS section is for everyone who doesn't know what the Midi sockets are for, and for those who hanker after making music even if they don't consider themselves to be much of a musician.

New technology

MUSIC and indeed Midi, on the ST is a consuming, relaxing and rewarding pastime. However, it can be a very confusing area to get into, even for the accomplished traditional musician, with lots of new technology to take on board and many new terms to learn.

We will take you on a trip from the very beginnings to quite advanced composition and music techniques, such as sequencing, scorewriting and voice editing. If you are a newcomer both to music in general and Midi in particular some of the global terms applied within this field may be at first confusing. These will be explained where necessary, though it is not possible to do so every time such a term appears.

One of the prime aims of this section is to de-mystify Midi. Like sport, music is for everyone. It is often more fun to play something yourself, however badly, than it is to listen to a master musician. Through Midi it is possible for anyone – even if they only have a small amount of musical ability – to produce musical arrangements and have lots of fun in the bargain. Above all, music should be enjoyable and not a chore.

What is Midi?

LET us get Midi – an acronym for Musical Instrument Digital Interface – under our belt first. Assuming that you know what a musical instrument is, an interface is something which joins two things together. So a musical instrument interface is something which joins two musical instruments together.

Digital describes the way the interface works and in case you have just this minute unpacked your ST, it basically means numbers. That is, the signals used to convey infor-

mation from one instrument to another – via the interface – are digital signals, 1s and 0s, exactly the same as the numbers floating around inside your ST.

The Midi specification, drawn up by the world's major musical instrument manufacturers in 1983, specifies the data format – the numbers – to be used to transmit various musical messages. For example, there is a Midi message meaning turn a note on – the musical equivalent of pressing a key on a keyboard – and a message meaning turn it off – take your finger off the key. Using just these messages we could program the computer to play a tune on a Midi-compatible instrument by making it transmit a series of Note On and Note Off messages through the ST's Midi Out socket.

There are more aspects of a musical performance to consider than the Note Ons and Offs. What about dynamics? On an acoustic piano, the harder you hit a key the louder the note sounds. Many synthesisers create this effect by using a velocity sensitive keyboard. This responds to the speed with which you press down a key and converts it into velocity (or loudness) information.

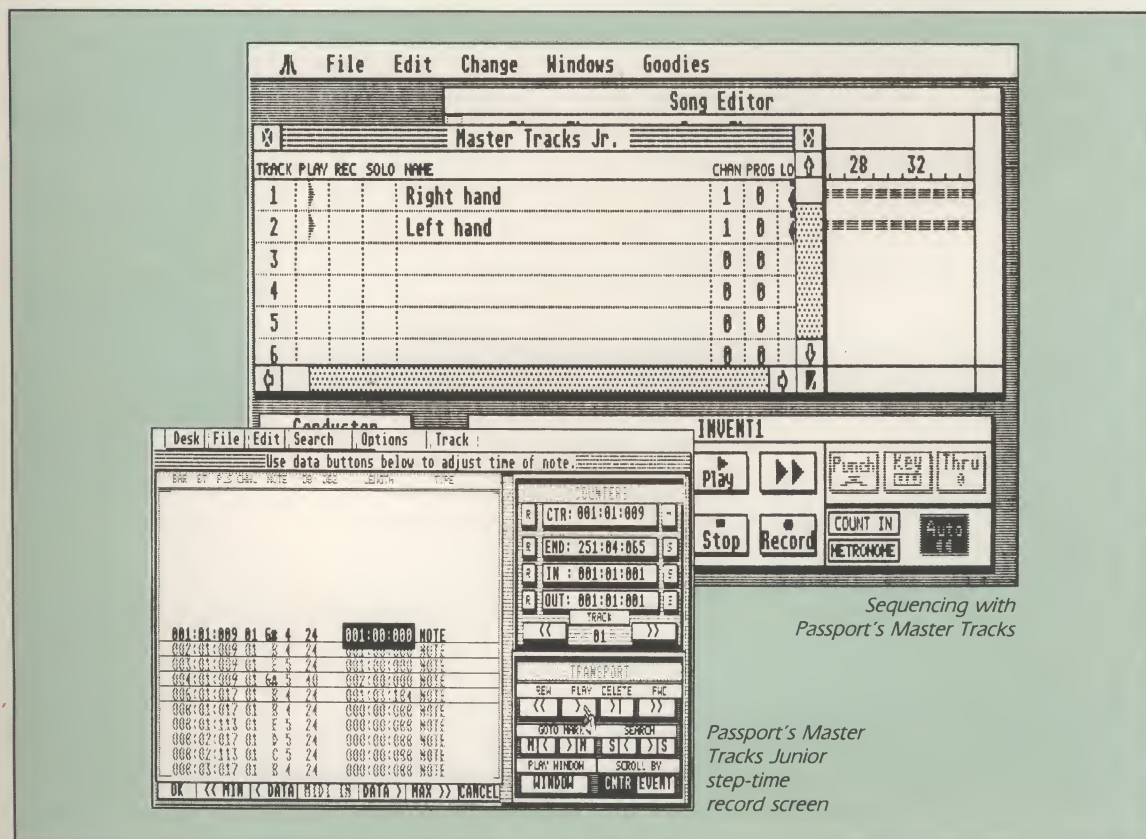
Synthesisers can produce lots of different sounds and you can change these over Midi by sending Program Change messages. You can control a synthesiser's pitch bend wheel and modulation wheel and activate any of a number of controllers to switch vibrato on and off and control a sustain footswitch, for example.

There are more Midi messages than these, but all consist of a series of numbers – that's basically what Midi is about.

Like a tape recorder

If you connect an instrument to your ST through the Midi sockets and play some notes the relevant Note On, Note Off and Velocity messages zap along the cable into the computer. If you were running a sequencing program, this information would be stored as numbers. To reproduce what you have played you just transmit the messages from the computer back to the instrument.

You can see that in such a case the computer is acting very much like a tape recorder. In fact, much Midi software adopts a tape recorder approach, with controls labelled Record, Play, Fast Forward, Rewind and so on. Most musi-



cians are familiar with the principles of multi-track recording and transferring that familiarity to the software makes it easy to understand.

The important thing to realise, however, is that the computer is only storing digital signals – numbers – and not analogue or audio signals which tape recorders use. As a computer user, you'll appreciate how easy it is to manipulate numbers.

For example, to play a tune faster using a tape recorder you must increase the speed at which the tape runs past the playback head. This, unfortunately, also results in an increase in pitch. Tape recorders with varispeed controls work this way.

Using your ST, all you have to do to increase the speed is to transmit the numbers a little faster. You're not altering the numbers themselves, so the pitch remains the same. If you want to increase the pitch that's easy to do, too. Simply add a constant value to all numbers representing a pitch.

One more example. If you have a tape recorder you'll know some recordings are noisy with tape hiss. This is a result of recording signals at a very low level. Multi-track machines can record several different music parts on different tracks. To free a track so you can record another part on it, it's common practice to mix two or more tracks together by recording them on to a single track, a process known as bouncing. The more times you bounce, the more noise you add to the system. This is because you are working with analogue signals.

As soon as you switch to numbers, signal degradation becomes a thing of the past. After all, how do you add noise to the number 1? You see how powerful and flexible digital signal storage is. There are lots more tricks you can perform with numbers and we'll be examining some of them in due course.

Midi software and hardware

NOW you know how Midi works you can forget about it for the time being because most programs shield you from the

system's intricacies. Plenty of software will take you down among the bits and bytes if you want to go that far but you can create a lot of music without knowing anything about Midi – just plug in and follow the instructions.

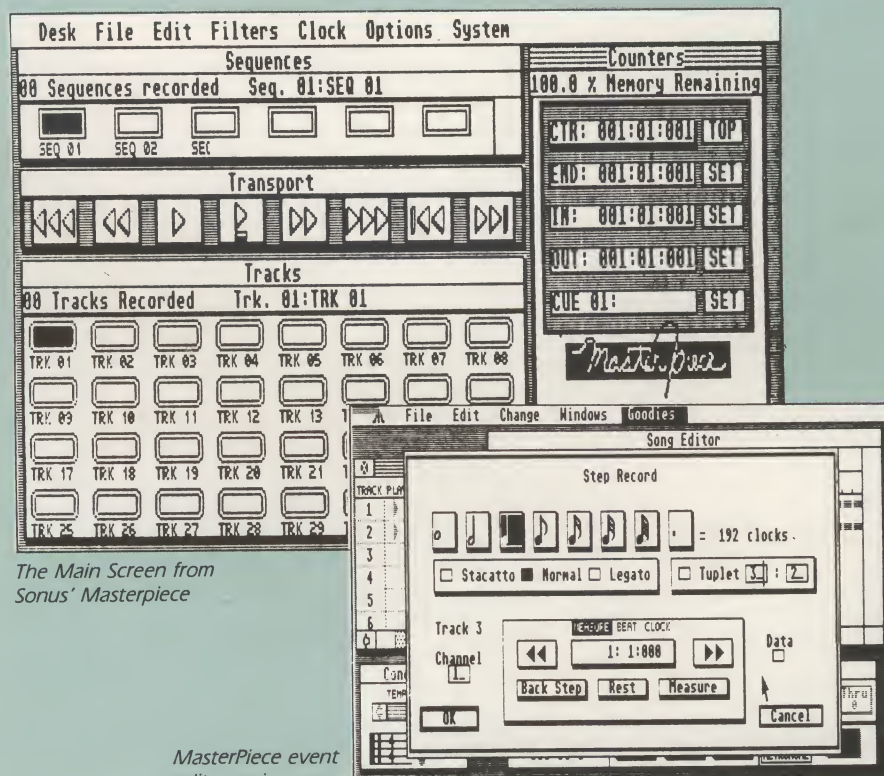
Programs which let you record and playback music are generally referred to as sequencer software – such as Sonus' Masterpiece shown here. Not so long ago a sequencer was a hardware device which could only play a fixed number of say 10 or 20 notes, hardly enough for a chorus, never mind a whole tune. But it was enough for a repetitive bass line and this type of sequencer was very popular with groups such as Tangerine Dream. Modern sequencers, however, could be more properly called digital multi-track recorders and, as we have seen, they can outperform their analogue cousins in many ways.

One of the drawbacks to digital recording, however, is that each music part requires a sound source in order to be heard. Using a tape recorder you can record several parts with one synth, changing the sounds on the synth each time you record a part. With Midi the parts are stored as numbers and the whole performance is played all at once, "live" as it were. If you record 16 parts you'll need 16 sound sources or instruments for playback.

There are two ways around this. One involves using a multi-track tape recorder. All the music parts are recorded into the computer one at a time and a timing or synchronisation signal is recorded on to one of the tape recorder tracks.

This signal is fed into the computer and used to synchronise the playback of each of the parts. They can be played one at a time, each using a different sound, and recorded this way on to the multi-track, all in perfect synchronisation.

The second method involves using a multi-timbral synthesiser. These are very interesting beasts and were developed as a direct result of Midi. You know synthesisers can produce lots and lots of sounds, well a multi-timbral instrument can play several sounds at the same time. A multi-timbral instrument may be able to play four or eight different music parts at once – under computer control, of course – and are ideal companions for Midi sequencers, adding necessary versatility.



The Main Screen from Sonus' Masterpiece

MasterPiece event editor main screen

ANY business worth its salt will need to keep track of its suppliers and customers. This can often be a laborious process of making and updating hand-written mailing lists and directories of important phone numbers. However, all this can be simplified and speeded with the aid of your ST and a database program.

A database or datacard program will allow you to create a filing system on disc of Important Information which can then be quickly and easily accessed, updated, searched and sorted as required. Total or selected Information can then be output at will to your printer.

A typical public domain database program will allow up to 4,000 quite detailed records. Even this hefty number can be increased by sub-indexing on a number of separate discs. For example six discs can contain 4,000 records each – totalling 24,000 records in all.

The commercial equivalents have even more breathtaking capabilities, allowing calculatory graphics effects such as graphs and pie charts, and data storage of over 40,000 records in one file. And some of the more recent professional database packages – for example, Superbase Personal – allow single files to contain up to 999 indexed fields (specified lines of information).

Add to this the fact that individual text fields can have a limit of more than 250 characters – even greater with some software when importing data from external packages – and you get some measure of the power of a top notch ST database program.

Databases

THE joy of an ST-run database program is that you can store your own personal database filled with any information you like on one small 3.5in disc.

Such programs are ideal for storing customer and supplier names, addresses and telephone numbers as well as intrinsic business details relevant to each business client.

Figure I shows a typical page from a simple datacard – a smaller and less powerful brother of the fully fledged database – program. Of course, exact record details can be briefer or much more detailed than shown.

Once you have compiled a database of records you can search quickly for

any selected piece of information. For example, imagine you wish to construct a list of all suppliers of a particular product in the county of Sussex. This can be achieved by operating a simple Search command, for the string "Sussex".

Equally you can sort your data into either numeric, date or alphabetic order by using a standard Sort command. Most commercial database programs also supplement powerful search and sort facilities by a process known universally as mail merge.

This allows you to merge data you have collected into a compatible word processor to produce address labels, macro letters, forms and other duplicated mail that needs a personal touch. This saves time which would have been formerly spent on

repetitious duplication of names and addresses.

Such merge compatibility exists between several products, such as Kuma's K-Data with K-Word 2, and Timeworks Data Manager with Word Writer ST.

Simple database and index card programs are also freely available. Some allow field size – length of each line of information – to as many as 3,000 characters.

It is worth scanning PD Software library catalogues for some existing samples such as Database I. In addition, programs such as B.Bytes' B Base 2, shown in Figure II, costs less than £15 and provides good cataloguing facilities and room for up to 7,500 names and addresses on a double sided disc.

Secondary search Menu. Record 20 out of 101

Dire Straits
 Brothers In Arms
 Vertigo 1985
 824 499-2
 Compact Disc
 1. So Far Away
 2. Money For Nothing
 3. Walk Of Life
 4. Your Latest Trick
 5. Why Worry
 6. Ride Across The River
 7. The Man's Too Strong
 8. One World
 9. Brothers In Arms

Arrow Keys: -Up/Down .Left-Top, Right-Bottom, Return-Found, P-Print, Undo-Quit.

Figure I:
A typical
page from
a datacard
program

Secondary search Menu. Record 60 out of 102

Mr & Mrs J. Soap
 10 Letsby Avenue
 Tinseltown
 West Sussex
 WRS 688
 Tel: 0568 3456
 Orders to date: 14
 Invoice date: 23rd of month

Arrow Keys: -Up/Down .Left-Top, Right-Bottom, Return-Found, P-Print, Undo-Quit.

Figure II:
A completed
single record
using B Base 2

Getting things sorted out

Figure III:
A completed
record using
Data Manager
Professional

| Country | Population | Capital city | Religio |
|--------------|------------|------------------|---------|
| Britain | 55000000 | London | Christi |
| Portugal | 9800000 | Lisbon | Christi |
| Spain | 37746000 | Madrid | Christi |
| Andorra | 39940 | Andorra la Vella | Christi |
| Eire | 3443000 | Dublin | Christi |
| France | 54453000 | Paris | Christi |
| Monaco | 20000 | Monte Carlo | Christi |
| Italy | 53744000 | Rome | Christi |
| Switzerland | 6400000 | Berne | Christi |
| West Germany | 61306000 | Bonn | Christi |
| Belgium | 9650000 | Brussels | Christi |
| Luxemburg | 364000 | Luxemburg | Christi |
| Vatican | 300 | Vatican city | Christi |

Figure IV:
An index
of data files

Using a database

Filling in a database with the information you require is a simple and speedy task once you become familiar with a few procedures. After you decide what type of information you want to store you must construct a format to hold that data in an ordered and clear manner.

Imagine you want to create a name and address list of business clients. Think of the data format as a form that you fill in for each of the people on your address list. This form would have a line for each piece of information about one person on the list, and each line would have a title so you would know what to write on that line as in the following example:

First name:
Last name:
Address:
Town:
County:
Post code:
Phone:
Business name:
Product:

Each of these lines is called a field. The data format shown above consists of nine fields. With most database programs you can specify the type of information you want to store in each

field. This can be either numeric – numbers only – or textual. Some databases also allow fields to contain alphabetic data – single letters only – or calculatory form.

Due to the nature of the way the program sorts, information sorting will be quicker and easier on alphabetic or numeric fields.

Not only will you be able to choose what type of information will be stored in each field but you can also designate how long each field will be. However, due to memory constraints it is usually true that if you increase the length of each field you decrease the number of records the database can hold.

When you fill out your format for a

single person on your list you create one record. Each person's information is entered into a blank copy of the format, much like filling out a separate card for each one and keeping it in a card index file. An example of a completed database record using Data Manager Professional can be seen in Figure III.

The only difference is that when you finish filling in one record it will be stored in the ST's memory and can then be stored on your data disc.

Each record is numbered by the program in consecutive order. A group of records is called a data file. An index of records on part of a data file is shown in Figure IV.

| Product | Supplier | Price |
|---------------------------|----------------|---------|
| B Base 2 | B.Bytes | £14.95 |
| Mini Office Professional | Database | £24.95 |
| Data Manager | Timeworks | £39.95 |
| ST Organiser | Triangle | £49.95 |
| K-Data | Kuma | £49.95 |
| Data Manager Professional | Timeworks | £69.95 |
| H&D Base | Silica | £99.95 |
| Laserbase ST | Laser | £99.95 |
| Superbase Personal 2 | Precision | £99.95 |
| dBase II | First Software | £119.00 |
| BAS Database | BAS | £138.00 |
| dBMan | Atari | £194.00 |
| Superbase Professional | Precision | £249.95 |

Some common database packages for the ST

New variables

ONE important topic we have yet to cover in this section on C programming is pointers. It can be a confusing subject for newcomers as it introduces ideas which may be quite foreign, but in fact, it is fairly straightforward once you get the hang of it.

Although there are significant differences, there are also several similarities to Basic's PEEK and POKE, as we'll see. Wherever possible we'll show the Basic equivalent to the C code.

Pointers are a different type of variable. They aren't at all like the character, integer or floating point variety we've seen so far. Pointers, as their name suggests, are variables that point to items or objects stored in the computer's memory.

They, in fact, hold their address. These objects may be other variables, strings or arrays. Suppose *x* is an integer variable and its value is five. This can be defined like:

```
int x;
x = 5;
```

If *ptrx* is a pointer (and without going into detail about how it was created) then using the ampersand operator we can set it to point to the address at which the value of *x* is stored with the line:

```
ptrx = &x;
```

The equivalent statement in Basic would be:

```
ptrx = VARPTR(x)
```

Now that *ptrx* is pointing to *x*'s address what can we do with it? Well, *x*'s value can be accessed in a similar manner to the way in which Basic's PEEK and POKE operate. The following line sets *y* equal to the value of *x* – in this case, five:

```
y = *ptrx;
```

The asterisk indicates that you are accessing the contents of the item pointed to by *ptrx* and it vaguely resembles Basic's:

```
y = PEEK(ptrx)
```

where *ptrx* is an address. The value of *x* can also be modified using a similar process:

```
*ptrx = 6;
```

Notice that the pointer is now on the left hand side of the assignment statement and this means that the contents of the item pointed to by it is equal to whatever is on the right hand side – in this case, the integer value 6. This is like the Basic statement:

```
POKE ptrx,6
```

As a further example, listing 1 demonstrates the use of pointers by using them to swap the values of two variables. Notice that the two pointers are defined in line two of *main* as being integers (meaning the objects they point to are integers).

At first sight the third statement from the end is a strange one. It sets the contents of the integer pointed to by *ptrx* to the value stored at *ptrx*. In Basic this would look like:

```
POKE ptrx,PEEK(ptrx)
```

It must be stressed that the Basic equivalents are similar but by no means identical. C takes into account the object the pointer is pointing at and adjusts its operation accordingly. Integers, floating point variables and character arrays all take up different amounts of space in the memory. C will

automatically alter the number of bytes read or written to in pointer operations.

```
/* Swap variables */
/* Prospero C */

#include <stdio.h>

main()
{
    int x , y , temp;
    int *ptrx , *ptr;
    x = 3;
    y = 4;
    printf("x = %d , y = %d\n",x,y);
    ptrx = &x;
    ptr = &y;
    temp = x;
    *ptrx = *ptr;
    *ptr = temp;
    printf("x = %d , y = %d\n",x,y);
}
```

Listing 1

Character pointers

THIS isn't the limit of the use of pointers, and we have only just scratched the surface. Pointers can aim at any object, so they can just as easily point to a string, which is in fact, essentially an array of characters. So the following statements are quite valid:

```
char *string
string = "Some text..."
```

In this case the pointer *string* points to – or in other words, holds the address of – the start of the string. Now the pointer is defined as being a *char*. This type of assignment is identical to the variety we've seen before when defining string variables. The following two statements are the same in C:

```
char string[] = "Hello...";
char *string = "Hello...";
```

In order to be able to perform simple arithmetic operations on pointers C must be told what types of object they are pointing to. For instance, if the pointer *ptr* points to the string "ABC" it will hold the address of the first character – the start of the string. If the pointer is incremented with ++*ptr* it will point to the second character. If it is incremented again it will then point to the third and so on.

The following program defines the pointer *ptr* and sets it to point to the string "ABC". The three characters of the string are altered one by one so that the string becomes "XYZ":

```
/* Character Pointers */
/* Prospero C */

#include <stdio.h>

main()
{
    char *ptr;
    ptr = "ABC";
    printf("%s\n",ptr);
    *ptr = 'X';
    ptr++;
    *ptr = 'Y';
    ptr++;
    *ptr = 'Z';
    ptr--;
    ptr--;
    printf("%s\n",ptr);
}
```

In this case incrementing the pointer makes it point to the

Peeking and poking

next character in the string, which is essentially an array of characters. If the pointer was an integer type pointing to an array of integers it would be incremented by whatever amount is necessary so that it points to the next integer.

String functions

THE following short C program demonstrates how to compare two strings to see if they are the same. The code does not use pointers:

```
/* Copy strings */
/* Prospero C */

#include <stdio.h>

main()
{
    char astring[] = "Hello...";
    char bstring[] = "Goodbye!";
    int test;
    test = compare(astring,bstring);
    if ( test )
        printf("\nEqual\n");
    else
        printf("Not equal");
}

compare(a,b)
char a[], b[];
{
    int i;
    i = 0;
    while ( a[i] == b[i] )
        if ( a[i++] == 0 )
            return(1);
    return(0);
}
```

The function *compare()* at the end of the listing is the one that does the comparing and it returns a value of 1 if the strings are the same, otherwise zero is returned.

The strings are passed as character arrays using code that we've seen several times before so there's nothing unusual here.

The function can be rewritten using pointers:

```
compare(a,b)
char *a, *b;
{
    while ( *a++ == *b++ )
        if ( *a==0 && *b==0 )
            return(1);
    return(0);
}
```

We have seen the post increment function before, but here it is worth noting that the increment in **a++* refers to incrementing the pointer and not the contents of the object pointed to. As you can see, this version of *compare* is slightly more compact and is just as readable.

In a similar fashion we can also copy strings using either character arrays or pointers. As before, the pointer version is more concise.

Here is the standard non-pointer version:

```
copy(a,b)
char a[],b[];
{
    int i;
    i = 0;
    while ( a[i] != 0 ) {
        b[i] = a[i];
        ++i;
    }
}
```

And the pointer version looks like this:

```
copy(a,b)
char *a,*b;
{
    while ( (*b = *a) != 0 ) {
        a++;
        b++;
    }
}
```

While this may seem like an improvement it can be shortened. The post-increment instruction can be added to the pointers in the *while* test:

```
copy(a,b)
char *a,*b;
{
    while ( (*b++ = *a++) ) ;
}
```

This shows just how compact C listings can become. There is a temptation to produce extremely compact, and consequently, almost totally unreadable code.

Stringing along

POINTERS can be employed for quite a wide variety of functions, so as a further example of their use we'll write a simple function to return the length of a string.

A string is a character array and the function written as normal without using pointers would look like:

```
getlen(s)
char s[];
{
    int i;
    i = 0;
    while ( s[i] != '\0' )
        i++;
    return(i);
}
```

The counter *i* is set to zero and each character is examined to see if it is the end of string marker — zero. When it is found the length is returned. You would call the function with a line like:

```
length = getlen(string);
```

There's nothing wrong with this function, but as with any programming task there is always an alternative way of performing the same operation. If we rewrite this making use of pointers our first attempt might look something like:

```
getlen(s)
char *s;
{
    char *p;
    p = s;
    while ( *p != 0 )
        p++;
    return(p-s);
}
```

As we have seen before, we can compact this code quite significantly. The pointer declaration can be combined with the following assignment line. The pointer can be incremented in the *while* test and we don't, in fact, need the test itself. Here is the compacted version:

```
getlen(s)
char *s;
{
    char *p = s;
    while ( *p++ ) ;
    return(p-s-1);
}
```


Redrawing a Gem window

IT is often necessary to redraw a Gem window's contents from time to time. For instance, when it is resized, moved, topped or overwritten its contents may be corrupted. Here is a simple C function which allows you to redraw a window's contents after it has been moved or resized:

```
/* Redraw a window's contents */
redraw(w)
/* w=current window handle. Expects
   window coordinates to be stored
   in the arrays wx,wy,ww,wh */
int w;
{
    int ew,eh;
    v_hide_c(handle,0);
    wclip(w); /* Clip window */
    clearw(w); /* Clear window */
    /* Draw circle */
    vsf_color(handle,1);
    ew = wx[w]+ww[w]/2;
    eh = wy[w]+wh[w]/2;
    v_ellipse(handle,ew,eh,ww[w]/2,
              wh[w]/2);
    v_show_c(handle,0);
}
```

The function *redraw(w)* uses the *wclip* we developed earlier to recreate the contents of the current window at its new position.

Note that *redraw(w)* currently assumes that there is only a single window on the screen. If we wish to use multiple windows this function will have to be expanded considerably.

Fulling a window

ONE of the common requirements of a window management routine is the ability to enlarge a window to fill the whole screen. This can be performed using the procedure *window_full(w)*:

```
window_full(w)
/* Assumes that the window coords
   are held in arrays wx,wy,ww,wh.
   w is the handle of the current
   window.
   full is a global variable */
{
    int xs,ys,ws,hs;
    if(full)
    {
        /* Do nothing */
        full=0;
        return;
    }
    else
    {
        /* Get working area of desktop */
        wind_get(0,4,&xs,&ys,&ws,&hs);
        /* Set full flag to 1 */
        full=1;
        /* Set new window size */
        wind_set(w,5,xs,ys,ws,hs);
        /* Get working area of new window */
        wind_get(w,4,&wx[w],&wy[w],&ww[w],
                &wh[w]);
    }
}
```

The first action of this procedure is to check whether the window is already full. If so, control is returned back to the

function which called it. Otherwise, the current window is set to the maximum area available from the desktop using the *wind_set* command. If you intend to use *window_full(w)* within your own programs you will have to set the variable *full* to zero before calling it.

Moving a window

WHEN we created the *window_control* function we needed a way of moving and resizing a window on the screen. The standard method of achieving this effect requires the use of the AES function *wind_set*. This can be seen in the following C procedure:

```
window_move(w)
/* Expects window coordinates to be
   stored in arrays wx,wy,ww,wh and
   w is the handle of the current
   window. The message array must
   have been defined previously. It
   is assumed to have been returned
   by the evnt_mesag function */
int w;
{
    /* Define coordinates */
    int xs,ys,ws,hs;
    /* Get new coordinates */
    xs=message[4];ys=message[5];
    /* Get new size */
    ws=message[6];hs=message[7];
    /* Check for minimum width */
    if (ws<40) ws=40;
    /* Check for minimum height */
    if (hs<50) hs=50;
    /* Move window */
    wind_set(w,5,xs,ys,ws,hs);
    /* Get new working coordinates */
    wind_get(w,4,&wx[w],&wy[w],&ww[w],
            &wh[w]);
}
```

The effect of *window_move* is to set the new dimensions of the window with *wind_get* and then calculate the appropriate working coordinates. See how we've checked for the minimum width and height. This prevents you from selecting a window which is too small to hold a reasonable amount of information.

The function *window_move* was designed specifically for use with the AES *evnt_mesag* routine. If you want to control a window independently of this function you will have to change the lines which get the new dimensions of the window. That is:

```
xs = message[4];
ys = message[5];
ws = message[6];
hs = message[7];
```

The variables *xs* and *ys* should be loaded with the new screen coordinates of the window and *ws* and *hs* with the required dimensions.

If you're familiar with the Gem windowing system you will have already encountered the vertical and horizontal scroll bars used to control a window's contents. We'll now discuss how we can use these features from one of our own programs.

The first requirement is to incorporate the new attributes into the existing window definition. This can be done by changing the property list used in the original call to the *wind_create* function. If, for instance, we wanted to install a window at the centre of the screen, we could execute the lines:

```
kind=NAME|CLOSE|MOVE|SIZE|VSLIDE|HSLIDE;
whandle = wind_create(kind,200,100,
100,50);
```


A public domain C compiler



If you'd like to be able to follow this Gem programming section, but are unwilling to spend more than £100 on a commercial C compiler, you might be interested in a version of this language which has recently appeared in the public domain. It is called Sozobon C and can be bought for around £3.50 from your local PD library.

Sozobon C appears to conform to the complete Kernighan and Ritchie specification. It includes a full set of Gem libraries and is easily capable of compiling all the example programs which have been featured in this Gem tutorial.

As you might expect from a PD program, there are a

couple minor limitations to the system.

Also note that the linker supplied occasionally generates a harmless error message during compilation of some windowing routines. Fortunately this error is NOT fatal, and has no effect whatsoever on the resulting programs.

Sozobon C is currently supplied on one double sided 720k disc, but as the package also works perfectly on an unexpanded 520ST, it's well worth shopping around for a copy on single sided discs.

Sozobon C is one of those rare programs which deserves a place in everyone's library. So get hold of a copy without delay – and C for yourself!

Additionally, we would also have to add the amended attribute list to any subsequent calls to *wind_calc*. Once we have initialised the sliders we then need some way of manipulating them from within the programs.

The AES includes a range of commands which allow us to change either the size or the position of the two scroll bars. These can be accessed through the *wind_set* and *wind_get* functions. The formats of these commands are:

```
r = wind_set(whandle,option,setting);
/* Set a slider */
```

and:

```
r = wind_get(whandle,option,&setting);
/* Read a slider */
```

The *option* parameter holds the appropriate function number and *setting* contains a value from 0 to 1,000. This represents either the new or the current status of the slider, depending on whether we have called the *wind_set* or the *wind_get* command. As usual, *r* holds the result of the function. If an error has occurred, a zero will be returned in this position.

Here is a full list of the available commands:

Option 8: Sets/reads the current position of the horizontal slider. This can range between 0 (far left) and 1,000 (far right).

It is important to realise that the value is only relative to the current window. So if its size is subsequently changed, the physical appearance of the slider on the ST's screen will be adjusted automatically.

Also, as the slider's precise dimensions will vary depending on the size of the window there is no guarantee that any individual movement will actually be reflected on the ST's screen:

```
/* Moves the slider to the
middle of the window */
wind_set(whandle,8,500);
```

Option 9: Sets/reads the position of the vertical slider. A setting of 0 represents the top of the window and a value of 1,000 the bottom:

```
/* Reads the current position of the
vertical slider and places it in
the variable pos */
wind_get(whandle,8,&pos);
```

Option 15: Sets/reads the size of a horizontal slider bar. This can range in size from a small square (-1) to the maximum width of the current window (1,000):

```
/* Sets slider to half the
available space */
wind_set(whandle,8,500);
/* Reads slider into the
variable size */
wind_get(whandle,8,&size);
```

Controlling sliders



THE AES windowing system allows the window sliders to be moved with just a simple click of the mouse pointer. This is controlled using the event handler we encountered in the section on *evnt_mesag*.

We'll now examine the different messages which can be generated by these sliders.

Message 25: WM_HSLIDE

This is produced when the horizontal slider bar in the current window is manipulated. Once the change has been detected the program should immediately update the position of the slider using a call to the *wind_set* function:

```
wind_set(whandle,8,pos);
```

Where *pos* holds the new position of the horizontal slider. The return values are:

```
message[3]: Contains window handle
message[4]: New position of slider
```

Message 26: WM_VSLID

This is generated if the vertical slider is moved. As before, the new slider position should be permanently set using the appropriate option from *wind_set*. The return values are:

```
message[3]: Contains window handle
message[4]: New slider position
```

We could now incorporate the code to control these sliders directly into the *case* statements used in our previous *gem_control* function like:

```
case WM_HSLIDE:
    xslide=event[4];
    wind_set(w,8,xslide);
    redraw(w);
    break;

case WM_VSLIDE:
    yslide=event[4];
    wind_set(w,9,yslide);
    redraw(w);
    break;
```

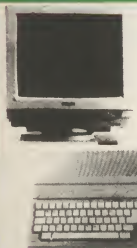
We would also have to modify the *redraw* function to display the relevant sections of our windows, depending on the values stored in the variables *xslide* and *yslide*.

MICROSNIPS

Dept. ATARI ST. USER

37 SEAVIEW ROAD, WALLASEY MERSEYSIDE L45 4QN

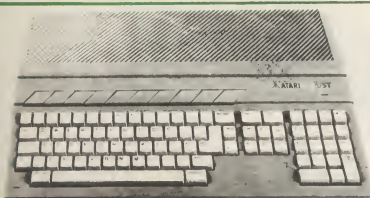
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520 STFM COMPUTER

- 520 STFM COMPUTER
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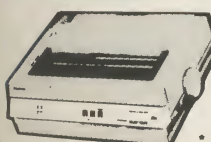
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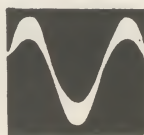
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John Wade explains how he produced a paperback book from his Atari ST's desktop

BOOK publishing on the cheap on the ST is now a feasible proposition. All you need is a good desktop publishing program like Mirrorsoft's Fleet Street Publisher, the use of a laser printer and you then have the camera-ready copy which a printer can paste up and litho print.

However, before you begin, remember that it could cost around £1,000 for printing 1,000 copies of a paperback book of around 100 or so pages with a coloured cover. Here is how you do it...

A handy size for a paperback is A5, measuring 210mm by 148mm overall and with preset margins, so your first task is to format this size page within your ST's DTP package.

Next you need a header. On the standard A5 page life is made a lot easier by typing xx on both the left and right margins at the top of the page with the book's title in the centre. This is underscored by a line of commas, which gives it quite a nifty look.

Whenever I needed to start a new page I called up this pre-formatted one and typed in the page number – even numbers on the left, odd numbers on the right – and removed the redundant xx on the opposite margin.

Choosing a typeface can be a bit of a problem for the uninitiated. Roman typefaces are the workhorses of the publishing world and you would not go far wrong choosing, say Times Roman for the

● John Wade is chief assistant news editor of *The Daily Telegraph*, London.

body matter, that is the running text.

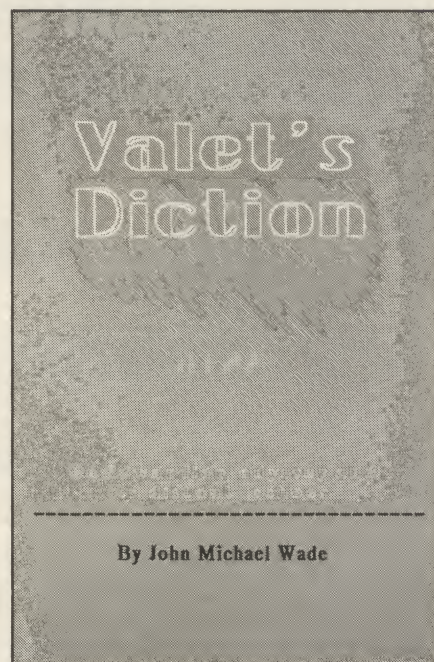
On this size of paper no smaller type size than 10 point should be used – type is measured in points and there are 72 points to the inch. If you want extra spacing between lines you can set 10 point on a 12 point body.

If you format the body matter typesize on your A5 headed page it will automatically set say 10 point Roman on a 12 point body whenever you input text. This extra spacing is known as leading, from the slivers of metal that the old hot metal printers slipped between the lines of type.

It is possible to use a larger format page, say A4 with proportionately larger typeface, and have this photographically reduced in the litho process to get a sharper image, but in my experience this is unnecessary if you use a high quality book printing paper.

Initially in producing my book, *Valet's Diction*

A novel approach to DTP



John's ST published book: *A Valet's Diction*

Diction – shown in Figure I – on the ST I was rather worried about how the laser paste-up would reproduce so I settled for a Sans Serif typeface on the ground that I would get a sharper print.

I need not have worried. What I did find however, was that a crisper looking type is obtained from the soft fonts used with the HP Laserjet. The whole of the book was reset – apart from the front and back covers – in soft fonts and I was delighted with the reproduction.

Using the DTP package

All the body matter was input using Mirrorsoft's Fleet Street Publisher DTP package without resorting to a word processor. FSP does quite an adequate job on type input, which is justified in full-out style on the full width of the A5 page by the program.

What you do need to do when inputting text is to load a spelling checker. However, I turned mine off when I got annoyed at its constant bleeping when typing in the names of foreign towns. The result is at least a dozen literals – typographical mistakes – which weren't spotted when proof reading the text on a dot matrix printout.

For the chapter headings and the covers a variety of the larger FSP typefaces were used. Don't be tempted to indulge in typographical gymnastics. Aim for clarity. A plain, straightforward approach is best because you are trying to get a message across simply and with clarity.

On the front cover the title was typed in

60 point West End Bold and then FSP reversed this into a shadow type. On the green cover the title is picked out in white with a subsidiary couple of lines in smaller type explaining what the book is about.

It is up to you whether or not you want an illustration on the cover. Bookshops tend to prefer them.

Choosing a title requires a good deal of thought. Try to get a crisp, snappy phrase that both sums up what the work is about and grabs the reader's attention. My book title, *Valet's Diction*, is a pun on the word valediction since the story is about the journey of a long-dead valet from Nottinghamshire to Norway in 1906. It thus works on two levels.

The chief snag about FSP is its inability to spill copy from page to page, so I had to create 104 different files for the pages. However, Mirrorsoft says this will be rectified in the next FSP version. Some other desktop publishing packages do run on from page to page.

Don't forget that before you hit the proper Page 1 of your book – always a right-hand page incidentally – you will need a half-title page which gives the book's title, then a full title page listing the title and publisher's name, followed by the copyright page giving the publishing details and the contents page. At the end of the book proper there may be an index or bibliography.

Once you have finished inputting the text have it proof read to find mistakes in spel-

Turn to Page 79 ►

Footprints on the tarmac of time Pale records of a hazy past Join up to create one chaste Image of Man in his prime

The man was a domestic servant, a valet to a landowner with a country mansion. Yet this valet, a Mancunian born and bred, had a public passion and a secret passion which made him a mite different to his below-stairs peers. The public passion was a love of photography, which turned him into the court cameraman of the Nottinghamshire family he served. The private passion was a desire to record his impressions of a land far from his beloved England.

This account of the life of an English servant in Norway in 1906, the valet kept hidden away and it stayed hidden for seven decades after his death. Now that it has come to light, together with the pictures he took on that journey, it sheds a rare glow on the splendours of Edwardian life at the height of England's glory.

His grandson, who stumbled across this 1906 tale in the mid-1980s, decided to retrace the footsteps of the grandfather he never knew. The extent of change and the persistence of continuity made this quest a remarkable journey through time to discover long-lost images of bygone days.

VALET'S DICTION by John Michael Wade

Published by Gaffer Press. Price: £3.95.

ISBN 0 9314015 0 5

The back page from John's book

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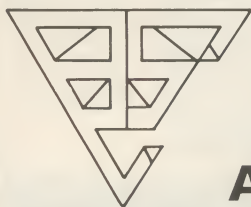
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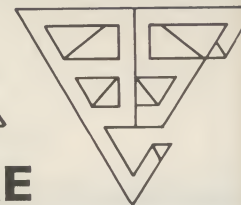
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|--------------------------------------|---------|
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◀ From Page 77

ling, facts and so forth and possibly to remove any libels. It is advisable to get someone else to do this as you tend to read the words so often you fail to notice glaring errors.

Off to print

Next you need a laser printout of the files. You can have this done at a bureau if you haven't got your own machine, but you must ensure that it is at least a 300 dots per inch laser printer for a sharp image on the pages which will be your camera-ready copy. The laser printing field is one which is advancing fast, with 400 and even 600 dpi machines available at a price.

Improved papers are also assisting here, and one London firm, John Blishen and Company, has introduced Laser-Pro 100, a special uncoated paper for laser printers.

As with house prices, you tend to find that you pay through the nose for printing in London while you can get the same work done much cheaper in the provinces. In east London £2,450 was quoted for the litho print of 1,000 copies of the book. A printer in Workson, Nottinghamshire quoted £1,696 for the same output. So it pays to shop around.

One firm which specialises in short run books is Antony Rowe of Chippenham, Wiltshire. With camera-ready copy supplied it prints paperback or cased books in runs of from 100 to 1,000 at extremely competitive prices.

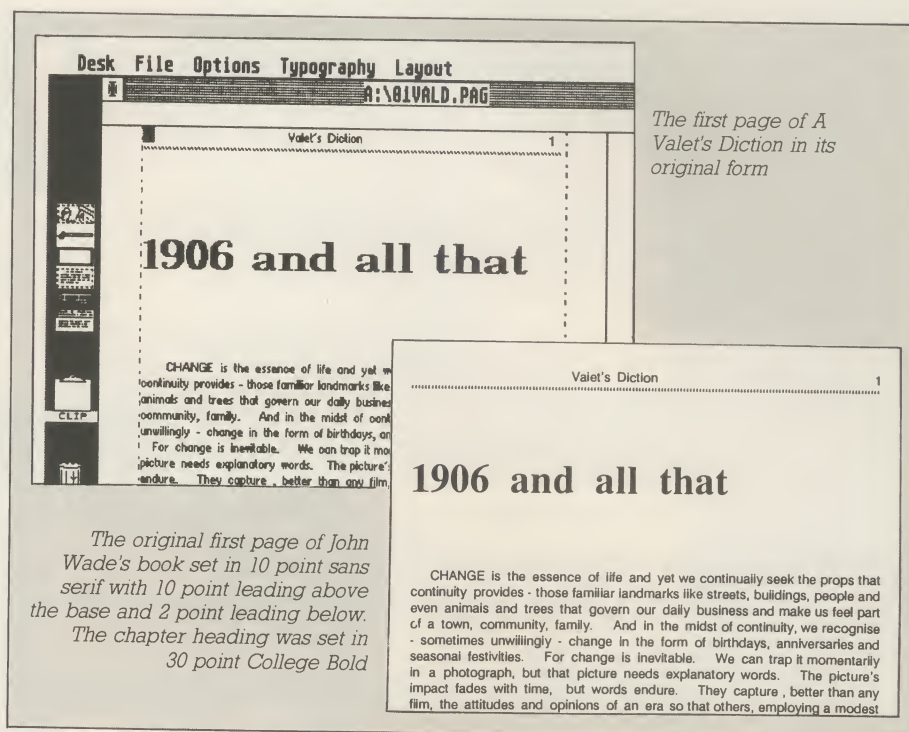
When you see the printer with your camera-ready laser printout you need to discuss what sort of paper to use. It is rated in grams weight (gsm) and you need a thicker paper for the cover, say 300 gsm.

Gloss art paper rated 100 gsm was chosen for the text pages and this reproduced remarkably well. Indeed, were you not to spot the clue on the copyright page that it was set on a 1040ST you would never guess that the book was not conventionally typeset.

The glossy art paper was also ideal for the pictures I got the printer to screen himself. I produced a dummy of the illustrated pages with instructions on where the captions I had produced should go.

From this point on, you are in the hands of the printer. He pastes up your camera-ready copy and prepares it for offset litho printing, known in the trade as cold setting in contrast to the superseded hot-metal setting.

Binding is the next decision you have to confront. One choice you have is between stapling, either saddle stitching when the staples are pushed through the spine, or stab-stitching when the staples are inserted through the side or gutter. Spiral binding and plastic grippers are two other options, though perhaps the best is perfect binding, when the pages are glued along the spine to the cover.



The original first page of John Wade's book set in 10 point sans serif with 10 point leading above the base and 2 point leading below. The chapter heading was set in 30 point College Bold

You will also have to settle on a price for your book and write off for an International Standard Book Number which needs to appear on the back cover and on the copyright page.

In fixing the cover price, you need to take account of the expenses you have had in researching it, travel, photographs, and a multitude of other incidentals. Then when you have totted all these charges up and the cost of printing, you then have to add one-third more to the price. This is because bookshops take this portion of the cover price as profit.

Once you have overcome all these problems, you have mastered the easy bit and you face the toughest part of the business – selling the thing.

These days with more and more small newsagents and little bookshops being swallowed by the giant chains with central buying departments life is made that much more trying for the small publisher.

You find that you can get an instant decision from a small bookseller and often from the larger firms, such as Dillons. But chain newsagents-cum-bookshops are a different proposition. It can take months to get them to move, if at all.

If you intend to try to get these chain newsagents to stock your book, badger them for months before publication date. Otherwise you will find that all the efforts you have made in circulating Press hand-outs and review copies to newspapers comes to naught when the book-buying public can't find it in the shops when it's read the reviews.

Finally, you will learn to your dismay that the great British public is not much in to buying books other than airport blockbusters.

"Twas ever thus". Yet there are

unexpected bonuses. There is that frisson of joy when you first open the box despatched from the printers and pick out that pristine tome which is all your own work on your trusty ST ... well, all bar the printing of it.

And there is that humbling experience when unknown readers write back to you saying that you have shone light on the dark recesses of family history and made the world of 1906 live again. When that happens, you know the task was worth doing.

FACT FILE

Fleet Street Publisher is produced by Mirrorsoft, Athene House, 66-73 Shoe Lane, London EC4P 4AB.

Vale's Diction: An Edwardian Odyssey and its Distant Echoes by John Wade, is published by Gaffer Press, 28 Wych Elm Road, Hornchurch, Greater London RM11 3AB. Price: £3.95 (plus 55p post and packing).

ISBNs are obtained by writing with book details to the Standard Book Numbering Agency, 12 Dyott Street, London WC1A 1DF. Tel: 01-836 8911

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Short run book publishers are Antony Rowe, of Bumpers Farm, Chippenham, Wiltshire SN14 6QA. Tel: 0249 659706

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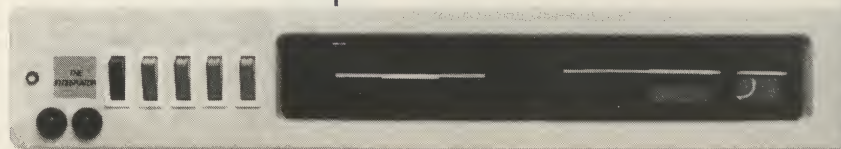
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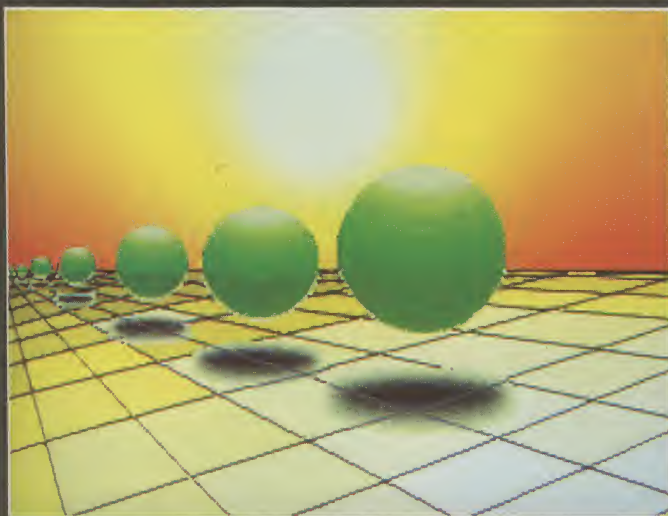
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Balls



Through the Keyhole

Please enclose an sae for the return of your discs. The address to send your masterpiece to is:

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GALLERY

WE look this month at the artistic talents of 17-year-old Mark James from Herefordshire. Using Spectrum 512 he has created a series of colourful and stunning studies, a few of which we show here. He first explored computer graphics on the Sinclair Spectrum before realising his true potential on the Atari ST.

Balls is a startling exhibition of colour and perspective. It was originally planned for a shop window display to draw the customer's eye, and

is best viewed from a distance. Through the Keyhole began simply as an experimental piece to try to achieve a feeling of depth.

The View gives an impression of an old watercolour. Once again if you stand back from your screen you will appreciate the true perspective. Finally, The Tube wraps The View on to a cylinder to create a most unusual and pleasing effect.

If you have a work of art you would like to see exhibited on our worldwide

stage why not send it in on disc to Gallery.

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The View



The Tube

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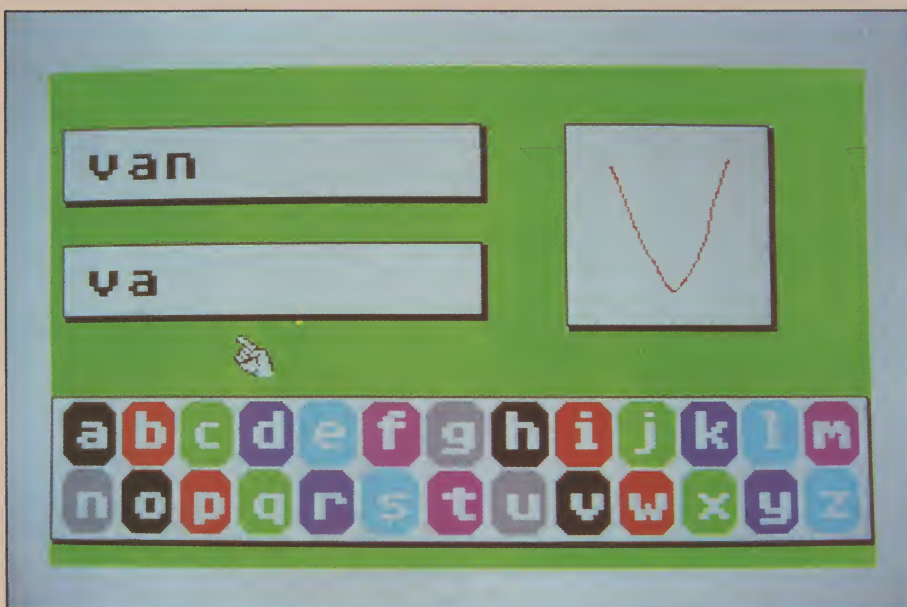
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Sean Caley offers this type-in educational program to consolidate your child's spelling



Program output without pictures

Playing with words

MOST commercial spelling programs compound a dilemma which faces anyone concerned with primary education – that children begin learning to spell and read using lower case characters, yet many social labels appear in upper case. So the standard micro/typewriter keyboard layout – on which most educational programs rely – with capital letter norm can be more than a little confusing.

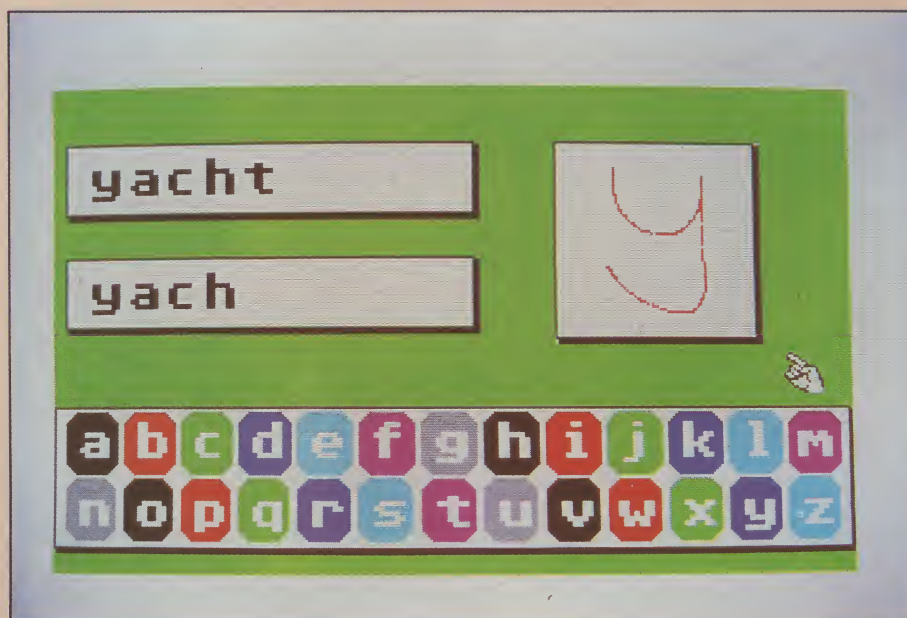
Children are also taught that the alphabet begins with **a** and ends with **z** rather than **Q** and **M** – look at the ST's keyboard. Therefore in a responsible spelling/reading program the qwerty system should be scrapped.

Following these accepted guidelines, I have written Wordplay using HiSoft's Power Basic. This simple spelling program is suitable for primary school age children.

To make its use as simple as possible I have included a grid where each letter can be selected by clicking on the chosen one using the mouse. Also included within the program are a series of words with which this age group should be familiar.

As it stands Wordplay includes one word only for each letter, but there is no reason why this cannot be expanded or why the current list cannot be changed to adapt an improved or different vocabulary.

Words are selected at random from the list and your child simply has to copy the word letter by letter. A correct choice of letter is echoed to the screen, an incorrect choice is signalled by a suitable noise. Once a word is completed a tune is played and another word chosen. You can finish at any time by pressing the



You can input any words of your choice

right-hand mouse button.

To illustrate each word a small picture must be drawn. You can use any of the plethora of art packages producing NEO files. However, to load the file correctly the pictures are drawn on a five by three grid – reading from left to right and top to bottom.

Two screens of words and pictures are used. The first covers words beginning with the letters a to o and the second with o to z. (Notice that o appears twice). Save them on the same disc as your program as SCREEN1.NEO and SCREEN2.NEO.

Only one tune is included in the listing, but the program has space for three. The places to include extra tunes are marked in the listing.

Listing 1

```
10 ' Wordplay by S.Caley
20 ' (c) ATARI ST USER
30 ' Written in Power Basic
40 ' Don't enter line numbers
50 defint a-z
60 mouse -1
70 library "gemvdi"
80 randomize timer
90 dim a%((2*4*63*(62/16)+1)+6)
100 dim b%((2*4*63*(62/16)+1)+6)
110 dim c%((2*4*63*(62/16)+1)+6)
120 dim d%((2*4*63*(62/16)+1)+6)
130 dim e%((2*4*63*(62/16)+1)+6)
140 dim f%((2*4*63*(62/16)+1)+6)
```

Turn to Page 84 ►

◀ From Page 83

```

150 dim g%((2*4*63*(62/16)+1)+6)
160 dim h%((2*4*63*(62/16)+1)+6)
170 dim i%((2*4*63*(62/16)+1)+6)
180 dim j%((2*4*63*(62/16)+1)+6)
190 dim k%((2*4*63*(62/16)+1)+6)
200 dim l%((2*4*63*(62/16)+1)+6)
210 dim m%((2*4*63*(62/16)+1)+6)
220 dim n%((2*4*63*(62/16)+1)+6)
230 dim o%((2*4*63*(62/16)+1)+6)
240 dim p%((2*4*63*(62/16)+1)+6)
250 dim q%((2*4*63*(62/16)+1)+6)
260 dim r%((2*4*63*(62/16)+1)+6)
270 dim s%((2*4*63*(62/16)+1)+6)
280 dim t%((2*4*63*(62/16)+1)+6)
290 dim u%((2*4*63*(62/16)+1)+6)
300 dim v%((2*4*63*(62/16)+1)+6)
310 dim w%((2*4*63*(62/16)+1)+6)
320 dim x%((2*4*63*(62/16)+1)+6)
330 dim y%((2*4*63*(62/16)+1)+6)
340 dim z%((2*4*63*(62/16)+1)+6)
350 blood "screen1.neo",peek(&h44e&)
360 get(2,2)-(64,64),a%
370 get(66,2)-(128,64),b%
380 get(130,2)-(192,64),c%
390 get(194,2)-(256,64),d%
400 get(257,2)-(319,64),e%
410 get(2,68)-(64,130),f%
420 get(66,68)-(128,130),g%
430 get(130,68)-(192,130),h%
440 get(194,68)-(256,130),i%
450 get(257,68)-(319,130),j%
460 get(2,134)-(64,196),k%
470 get(66,134)-(128,196),l%
480 get(130,134)-(192,196),m%
490 get(194,134)-(256,196),n%
500 get(257,134)-(319,196),o%
510 blood "screen2.neo",peek(&h44e&)
520 get(66,2)-(128,64),p%
530 get(130,2)-(192,64),q%
540 get(194,2)-(256,64),r%
550 get(257,2)-(319,64),s%
560 get(2,68)-(64,130),t%
570 get(66,68)-(128,130),u%
580 get(130,68)-(192,130),v%
590 get(194,68)-(256,130),w%
600 get(257,68)-(319,130),x%
610 get(2,134)-(64,196),y%
620 get(66,134)-(128,196),z%
630 start&=peek(&h44e&)
640 for n=0 to 1800 step 2
650 pokel start&+n,0
660 next n
670 window open 5,,202,32,80,76,0
680 window open 2,,5,32,166,28,0
690 window open 4,,5,76,166,28,0
700 window open 3,,0,134,319,56,0
710 vswr_mode 2
720 vst_height 12
730 vst_alignment 0,1
740 col=0: for x=5 to 293 step 24
750 col=col+1
760 if col=6 then col=7
770 if col>8 then col=1
780 vsf_color col
790 v_rfbbox x,136,x+21,160
800 next x
810 for x=5 to 293 step 24
820 col=col+1
830 if col=6 then col=7
840 if col>8 then col=1
850 vsf_color col
860 v_rfbbox x,162,x+20,186
870 next x
880 color 0
890 print "a";" b";" c";" d";
e";" f";" g";" h";" i";" j";" k";
;" l";" m"

900 print:print
910 print " n";" o";" p";" q";
r";" s";" t";" u";" v";" w";" x";
;" y";" z"
920 mouse 3
930 do
940 letter$=""
950 window output 2
960 cls
970 f=int(rnd*26)+1
980 select on f
990 =1:word$=" a p p l e":put(210,40
),a%,pset
1000 =2:word$=" b u t t e r f l y":pu
t(210,40),b%,pset
1010 =3:word$=" c a k e":put(210,40),
c%,pset
1020 =4:word$=" d o g":put(210,40),d%
,pset
1030 =5:word$=" e g g":put(210,40),e%
,pset
1040 =6:word$=" f l o w e r":put(210,
40),f%,pset
1050 =7:word$=" g a t e":put(210,40),
g%,pset
1060 =8:word$=" h o u s e":put(210,40
),h%,pset
1070 =9:word$=" i n s e c t s":put(21
0,40),i%,pset
1080 =10:word$=" j e l l y":put(210,4
0),j%,pset
1090 =11:word$=" k e y s":put(210,40)
,k%,pset
1100 =12:word$=" l a d y b i r d":put
(210,40),l%,pset
1110 =13:word$=" m o u s e":put(210,4
0),m%,pset
1120 =14:word$=" n e s t":put(210,40)
,n%,pset
1130 =15:word$=" o r a n g e":put(210
,40),o%,pset
1140 =16:word$=" p a r r o t":put(210
,40),p%,pset
1150 =17:word$=" q u e e n":put(210,4
0),q%,pset
1160 =18:word$=" r a i n b o w":put(2
10,40),r%,pset
1170 =19:word$=" s a n d w i c h":put
(210,40),s%,pset
1180 =20:word$=" t e d d y":put(210,4
0),t%,pset
1190 =21:word$=" u m b r e l l a":put
(210,40),u%,pset
1200 =22:word$=" v a n":put(210,40),v
%,pset
1210 =24:word$=" x r a y":put(210,40)
,x%,pset
1220 =23:word$=" w a t c h":put(210,
40),w%,pset
1230 =25:word$=" y a c h t":put(210,4
0),y%,pset
1240 =26:word$=" z e b r a":put(210,4
0),z%,pset
1250 end select
1260 print word$
1270 window output 4
1280 cls
1290 do
1300 if mouse(2)=2 then stop
1310 if mouse(2)=1 and mouse(0)>9 and
mouse(0)<312 and mouse(1)>135 and mou
se(1)<184 then
1320 if mouse(1)>156 and mouse(1)<168
then goto here
1330 if mouse(1)<160 then let$=chr$(9
6+(int((mouse(0)+17)/24)))
1340 if mouse(1)>=160 then let$=chr$(
109+(int((mouse(0)+17)/24)))
1350 if len(letter$)<18 then
1360 le=len(letter$)+2

1370 if mid$(word$,le,1)=let$ then
1380 letter$=letter$+" "+let$
1390 cls
1400 print letter$
1410 sound 1,15,8,4,15
1420 sound 1,0
1430 if len(letter$)>=len(word$) then
1440 play_tune
1450 exit loop
1460 end if
1470 else
1480 sound 1,15,2,2,20
1490 sound 1,0
1500 end if
1510 end if
1520 here: end if
1530 loop
1540 loop
1550 sub play_tune
1560 r=int(rnd*3)+1
1570 if r=1 then
1580 sound 1,15,8,4,15
1590 sound 1,15,3,5,15
1600 sound 1,1
1610 sound 1,15,3,5,15
1620 sound 1,15,5,5,8
1630 sound 1,15,7,5,8
1640 sound 1,15,8,5,8
1650 sound 1,15,5,5,8
1660 sound 1,15,3,5,30
1670 sound 1,15,1,5,15
1680 sound 1,1
1690 sound 1,15,1,5,15
1700 sound 1,15,12,4,15
1710 sound 1,1
1720 sound 1,15,12,4,15
1730 sound 1,15,10,4,15
1740 sound 1,1
1750 sound 1,15,10,4,15
1760 sound 1,15,8,4,30
1770 sound 1,0
1780 sound 1,15,3,5,15
1790 sound 1,0
1800 sound 1,15,3,5,8
1810 sound 1,0
1820 sound 1,15,3,5,8
1830 sound 1,15,1,5,15
1840 sound 1,0
1850 sound 1,15,1,5,8
1860 sound 1,0
1870 sound 1,15,1,5,8
1880 sound 1,15,12,4,15
1890 sound 1,0
1900 sound 1,15,12,4,8
1910 sound 1,0
1920 sound 1,15,12,4,8
1930 sound 1,15,10,4,22
1940 sound 1,0
1950 sound 1,15,10,4,8
1960 sound 1,15,3,5,15
1970 sound 1,0
1980 sound 1,15,3,5,8
1990 sound 1,0
2000 sound 1,15,3,5,8
2010 sound 1,15,1,5,8
2020 sound 1,15,3,5,8
2030 sound 1,15,5,5,8
2040 sound 1,15,1,5,8
2050 sound 1,15,12,4,15
2060 sound 1,15,10,4,8
2070 sound 1,0
2080 sound 1,15,10,4,8
2090 sound 1,15,8,4,30
2100 sound 1,0
2110 end if
2120 if r=2 then 'Put 2nd tune here
2130 end if
2140 if r=3 then 'Put 3rd tune here
2150 end if
2160 end sub

```


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To the uninitiated, a spreadsheet is a very useful program that not only makes short work of crunching large amounts of numeric data, but it can also be used with great effect in the area of forecasting.

A good businessman will always be asking questions about his business – how will a one per cent increase in the interest rate affect profits? What size pay rise can I give my staff and still exceed last year's profits? With a spreadsheet and his

enter, edit or format data that relates to a single worksheet cell. Extensive use is made of the mouse pointer, and a series of control panel buttons are used to specify the data type, its justification within a cell and the number of decimal places required.

The Format option can also be used to modify these parameters, but it operates on a block of cells or even globally across the entire worksheet.

Three data types are accepted by the spreadsheet – numeric, text and formula. A total of 67 different functions are ready for inclusion in your formulae cells. There is something here for everyone – trigonometry, logs, text and string handling, statistical analyses on blocks of cells,

ferring your spreadsheet information to the Mini Office Document Processor, Database or Graphics modules.

Data Interchange Format (DIF) files are compatible with other commercial packages like dBase and VisiCalc. Finally, if all else fails, you can write your information to disc as a good old fashioned, but universally acceptable, Ascii file.

Hidden away in the file menu is what is probably the most exciting feature of the whole package – the Exec file. The spreadsheet has a in-built command language – which uses written commands to perform every conceivable spreadsheet function.

By combining such commands with loops and conditional statements you can

Jon Revis examines the brand new Spreadsheet module in the budget Mini Office Professional business software suite

Spreading

ST the answers to these and many other questions are only a key press away.

As this module costs less than one quarter of the price of some spreadsheets what can you expect for your money? You get a comprehensive spreadsheet, a collection of desktop utilities, an 130-page manual containing two tutorials, a reference section plus a quick reference card for people who never read manuals.

The screen display is divided into three main areas – The worksheet display window, the control panel and the menu bar. The display window provides a 14 row by 9 column view of the possible 255 by 255 worksheet and this is flanked by vertical and horizontal scroll bars that provide means of accessing the rest of the sheet.

A title bar displays the name of the current sheet and a memory indicator informs you of the amount of free ram remaining as you construct your worksheet.

Occupying about one third of the screen is the control panel. Here you can

sorting and indexing functions, input requests and time and date routines.

At the top of the screen is a bar which houses nine pull-down menus providing you with rapid access to a wide variety of powerful functions. You can have any or all of the four desktop accessories provided in memory while running the spreadsheet program. The Desk menu is your gateway to the calculator, text editor, memo pad or disc utilities.

All file handling is performed via the File menu. Depending on how you configured your spreadsheet on the Options menu, you can load up to four worksheets into memory simultaneously. The individual sheets are present as four overlaid windows that can be dragged around and manipulated in standard Gem fashion.

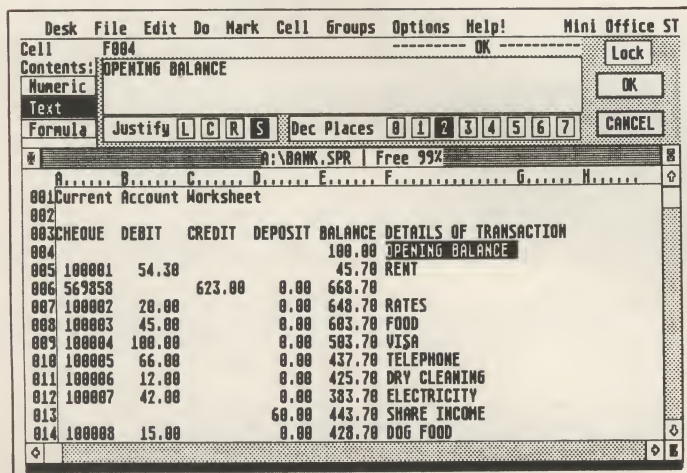
Exporting spreadsheet data to other packages is catered for. Data can be written to disc in any of three different file formats and that's in addition to the standard load and save options. Mini Office Format (MOF) files are used when trans-

create powerful programs that will, for instance, automatically run until a predetermined condition is met. Exec programs are written using the text editor and saved with an EXC file extension.

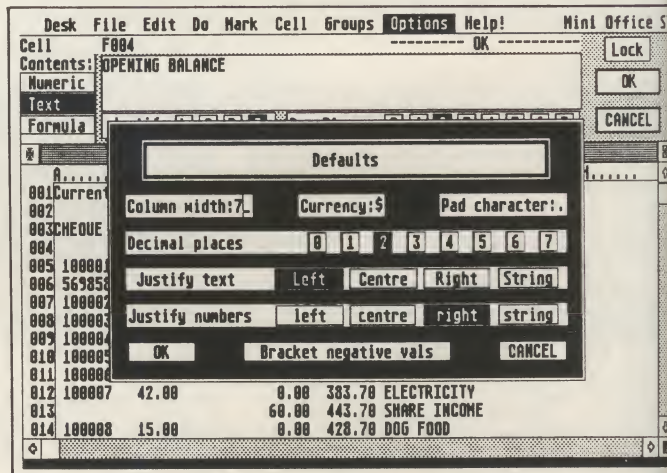
The Edit menu provides you with all the necessary tools for manipulating large blocks of cells. Forget about having to manually enter the coordinates when specifying a block of cells. Just point at one corner of the block, hold down the left mouse button, and drag a rubber-banded rectangle around the cells.

Once marked in such a way the block can be erased, cut, pasted, copied or spread, thereby making the construction of large spreadsheets a piece of cake. The last three options can all be performed either relatively or absolutely – a relative move results in any formula coordinates being adjusted to take account of the cell's new location, while an absolute move has no effect upon the contents of any formulae involved.

Menu four is the Do menu. The main facilities on offer here are printing and



Setting up a spreadsheet to hold current account details



Altering the default values for displaying cell contents

sorting. Sorting columns and rows into ascending/descending order is best only performed while editing a dataless spreadsheet, if you want to display the data from a completed worksheet in a sorted manner you should use the indexing facility.

Sorting physically shuffles the contents of cells, indexing merely displays their contents in a sorted format – the actual spreadsheet layout remains unchanged.

Printing appears on the Do menu in two different guises, Print and Soft Print. The former will send your worksheet to the printer, the appearance determined by the Print Mode option that can be found on the Options menu.

From there you can select the print

can be set up so that the cursor moves in one of four directions every time the Return key is pressed – normally it remains stationary and you have to move to the next cell using the cursor keys.

The main strength of having every facility accessible via pull-down menus is the way that they act as a memory aid while you are familiarising yourself with the program. However, once you have mastered the package they can become more of a hindrance – having to keep moving the mouse from the worksheet display window in order to call up the block editing routines can be a real pain.

Thankfully, the programmer saw fit to provide an alternative means of calling up these functions. By pressing the Con-

gaccounts

quality to be used, choose sideways printing for those huge sheets, or perhaps highlight specific spreadsheet columns. Soft printing dumps a copy of your sheet to disc as an Ascii file.

Accidental overwriting of spreadsheet data can be prevented by locking cells either individually or in groups. Any attempt to edit a locked cell results in the appearance of a dialogue box querying your action. From here you can choose to continue editing the data or return to the sheet.

A large spreadsheet often contains many columns that are of little interest to the person the information is aimed at. By selecting only those columns of real value to your target you can get your message across far more effectively. The Groups menu enables you to view up to seven specified rows and columns in isolation from the rest of the spreadsheet.

When entering data into a spreadsheet you will normally be dealing with complete rows or columns of figures. In order to speed this process the program

trol key plus a single letter you can activate 24 frequently used routines.

When working with a spreadsheet you will invariably have a series of headings above each column and several similar comments down the side. As you move down the sheet the column headings vanish off the top and this results in frequent movements back to the top of the sheet in order to confirm that you are entering data into the correct column.

The spreadsheet allows you to define one column and one row as titles – these then remain visible at all times, no matter how far down or across the sheet you are working.

The only black mark against the spreadsheet is that it can't produce any graphical output. These facilities are provided by another module which then doubles the cost of the overall package.

Anyone considering the purchase of a budget spreadsheet for the Atari ST should look no further than this latest Mini Office Professional module. For price and performance it is second to none.



FACT FILE

Product: Mini Office Professional Spreadsheet

Price: £24.95

Supplier: Database Software, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.

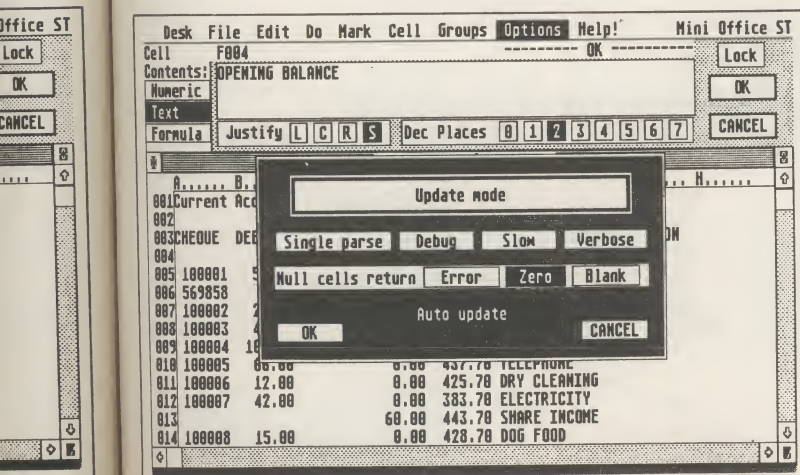
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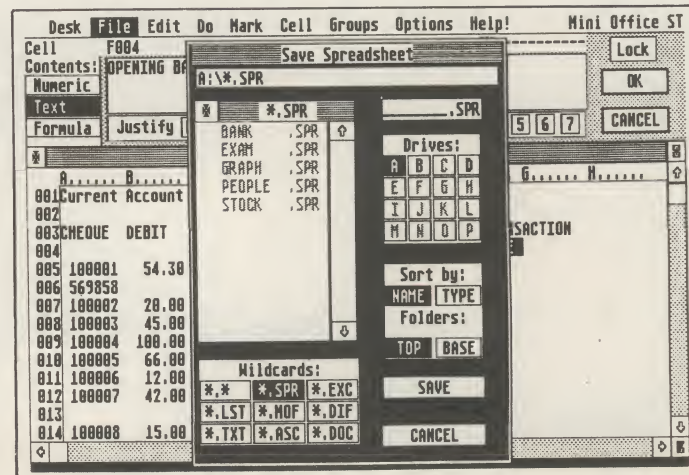
Powerful, flexible, easy to use, with good documentation.

AGAINST:

Can't produce graphs or charts – a separate module must be bought.



Setting the update mode of the sheet



Saving the finished sheet

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ATARI

No Alternative to success

Nic Outterside returns from a spot of R and R in West Yorkshire

THE story of Roger Hulley is one of growth and success in micro entertainment software. The cliché, local boy makes good was almost certainly coined with him in mind. Roger is Managing Director of Roger Hulley Holdings which acts as a parent umbrella for a whole range of well known companies in the home micro world.

Software labels are perhaps the most immediate banner under which you will recognise his influence. Indeed he has just about sewn up the budget market. Alternative Software has long held sway on the 8 bit entertainment market with a whole host of £1.99 games, while Summit Software has pushed out compilation and repackaged titles at £2.99.

Now the Alternative label is being used to launch budget (£14.99) games for the ST, though as the market develops Roger would like to slash this price to an even more remarkable £9.99. In a market where most ST software costs between £20 and £30 this will be some achievement.

Roger delights in off-the-wall ideas for software games as recent ST releases on this label have shown, with the arcade/adventure spoof on life at Buck House engagingly called *Mad Flunky*, a two disc text/graphic adventure called *Mystery of the Indus Valley*, and *Nightwalk* an excellent arcade game. Coming soon are *Wrangler* and *Combat Zone*, with many many more titles to follow.

In addition to this move Roger has recently launched the full price (£19.99) *Again Again* label, under the auspices of Tiger Developments Entertainment. This was launched in December 1988 with the excellent *The Munsters* – complete with free iron-on T shirt transfer and poster – and the immediate best selling football



For Roger Hulley, the rewards of success

managerial simulation, *Tracksuit Manager*.

New titles include the action-packed combat simulation *Operation Hormuz*, the hilarious but filthy *Gilbert*, and coming soon, *Saboteur III*.

Other concerns of Roger Hulley Holdings include A1 Primary Distribution which looks after direct distribution of

software to wholesalers, while DeLacy Duplication takes care of volume cassette duplication of all in-house products.

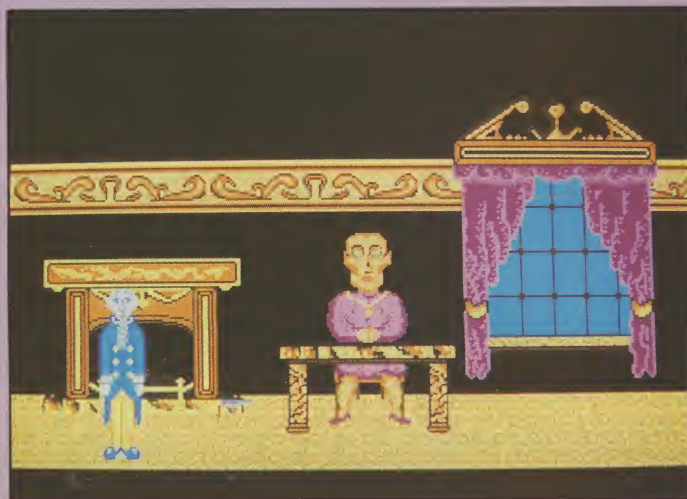
However, perhaps the pinnacle of Roger's concerns is R and R Distribution, the third largest software distribution company in the UK, which deals with distribution of all in-house and third party products direct to the retailers.

Success factor

Roger began his career working for EMI in the music record industry. Then in the early 1980s he saw opportunity for expansion and growth in the yet to be established home micro market.

He left EMI to set up R and R Computer Games as a distribution company. Operating from his front bedroom at home in the village of Cudworth, he became the first and only distributor of Mastertronic games. More and more shops took on Mastertronic and other R and R products as Roger successfully cornered the budget games market on the Spectrum, Electron and BBC Micro.

R and R went from strength to strength as the micro industry grew. In 1985 Roger moved to the current purpose-built premises in Pontefract. Almost immediately he set up A1 Primary Distribution to cut costs



Mad Flunky, a bargain priced spoof on life at Buck House

Turn to Page 92 ►

◀ From Page 91

and distribute bulk product direct to wholesalers.

More and more budget software houses trusted Roger with their products, and by late 1985 he had established himself as the largest distributor of budget software in the United Kingdom.

December 1986 saw the official launch of Roger's first own software label, Alternative. One of the first titles on this label was the cricket game Howzat, the launch of which coincided with England's cricket success Down Under. Sales soared to make Howzat an 8 bit best-seller.

More Alternative success followed with Pheenix and Operation Fireball. Roger took the next step by buying a stream of titles from other software houses – including Red Arrows and Micro Olympics from Database Software. These were repackaged and in some cases re-titled – for example Micro Olympics became Olympic Spectacular. Other programs – including half a dozen originally written by Roland Waddilove – were bundled on compilation discs and tapes called Triple Deckers. These stormed the Gallup charts and established Alternative almost overnight as a market leader.

Christmas 1987 saw Roger holding number one position on all formats with Run for Gold. Soccer Boss and Cricket International also held top three spots on the Amstrad CPC and Acorn Electron charts. At that point, nine titles in the Gallup chart belonged to the Hulley stable.

Alternative became the number one best selling software house for most of 1988, and it was during this time that Roger decided to turn his attentions towards the 16 bit machines.

Keeping a philosophy of 60 per cent rerelease and budget games against 40 per cent original full-price games, Roger began planning for the ST market. For the highly successful Munsters he commissioned the Teque programming team which had previously been responsible

for ST best-sellers Terramex and The Flintstones.

The new approach was consolidated with the launch of Roger's first full price original game label Again Again and production of Alternative/Again Again games for all formats, including ST, Amiga, MSX, and selected titles for IBM PC compatibles.

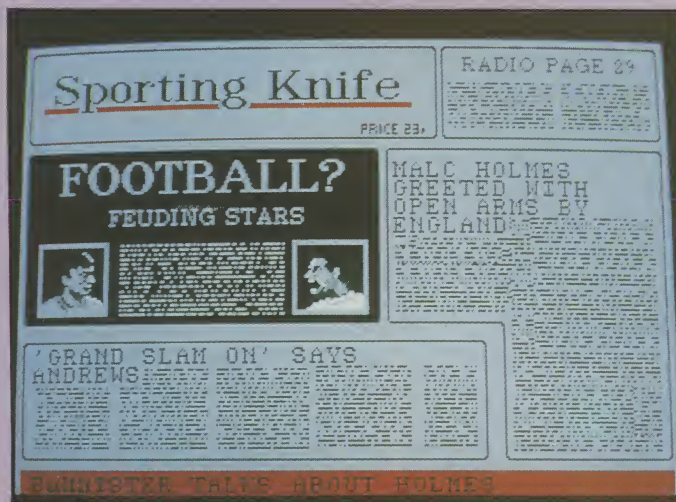
Giving 'em beans

Roger sees the future firmly in terms of the two distinctive own software labels. He has established two excellent Yorkshire based programming teams which will continue to develop new products – such as the controversial, but extremely funny Gilbert – to ensure the longevity of success for the Again Again label. Gilbert will be released with free green hankies, prizes of tins of baked beans and the ultimate shoot-'em-up, Snot-out at the OK Coral.

Roger appears to have a strong hold on the UK market and has already made massive inroads with exports to Spain and West Germany. Joint ventures with other software houses are planned, but such is

the nature of the software business that details cannot be released until the planned ventures are announced. However, one forthcoming product which follows Roger's off-the-wall trend and will be interesting to see is a simulation of Australian Rules Football.

Already with a workforce of 50 employees, manufacture, duplication, assembly, distribution and technical support are catered for on the premises. Roger would ultimately like to see all aspects of the software development and production take place under the Roger Hulley Holdings banner. At that stage the Hulley conglomerate would surely become the ultimate software house.



Tracksuit Manager – an instant bestseller



Gilbert, set to light up the ST Gallup chart

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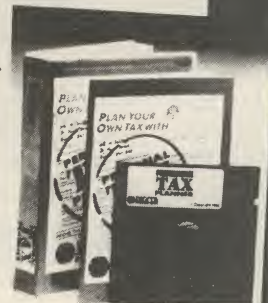
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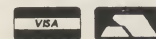
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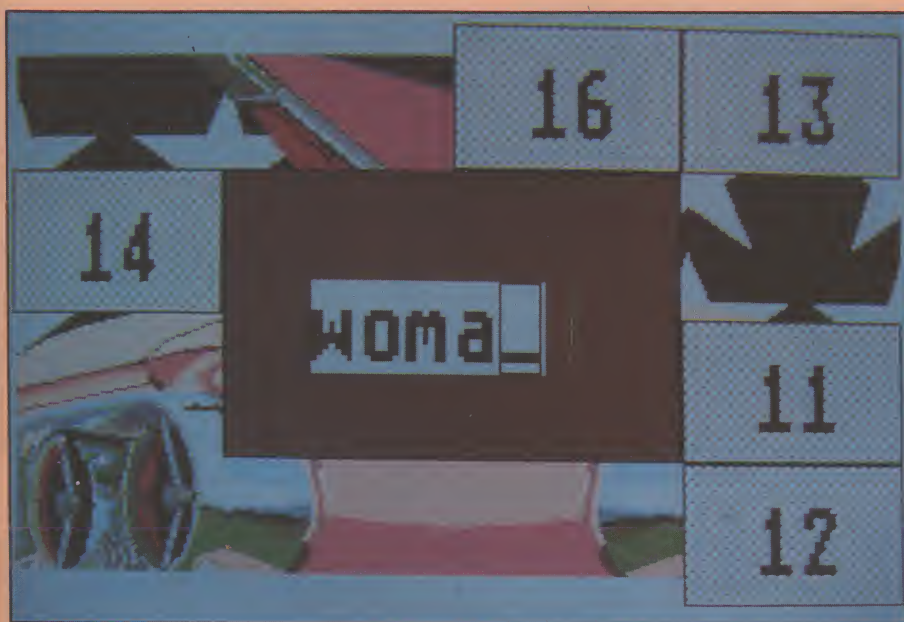
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Spell yourself a picture



DURING the past year many spelling programs for the ST have been released – Spellbook, B.Spell and Spell with Oscar immediately spring to mind. In that time HAT has established a reputation for producing top quality utility and learning packages which have filled vacuums in the market.

Now comes Jigsawspell, which not so much fills a need as sets a new standard for other packages to aspire to.

It supports the teaching and learning of spelling by, "encouraging children to remember words in a friendly environment rather than copying them over and over again".

Moreover, the program aims solely at attacking spelling from a visual recognition and retention angle. This method supplements and contrasts the phonic approach of Spellbook and B.Spell.

Jigsawspell is presented on a single-sided disc with accompanying manual in a smart and sturdy plastic folder.

Boot up the disc and you are presented with a loading screen depicting a digitised picture of the ST keyboard – the Jigsawspell logo. Under is a menu which allows you to change the default pictures and words or to continue with the program.

Click on Continue, the screen clears and asks you to input your name. Unlike its aforementioned cousins, Jigsawspell is

Nic Outterside reviews an unusual new spelling program which allows customised editing of pictures and words

totally keyboard driven and all entry has to be typed in.

Press Return and the whole screen is occupied by a four by four numbered grid. Randomly a number flashes and pressing Return again will reveal a word to be spelt. Press Return once more and the word is replaced by a series of dashes to represent the letters in the word.

Spelling correctly

Type in the spelling correctly and you are rewarded by a Correct or Right caption and a piece of a picture jigsaw is revealed. If the spelling is incorrect a Wrong or Try Again message appears and you are given another chance to spell the word.

No score is kept and no time or go limit applies, which relieves pressure and encourages a beginner or slow learner to proceed at leisure.

As you successfully spell each word

more and more of the picture is revealed to give a pleasing reward.

The disc comes with four pictures of an apple, a car, a panda and the Jigsawspell logo. However, the greatest strength of this package is the ability it gives to customise your own picture and word files.

Through the Change Picture option you can load in any Degas P11 or First Paint file. This allows an ever changing library of pictures to sustain interest and add variety to the learning procedures.

The customise utility

Similarly the disc holds databanks of words in three levels of graded difficulty – 100 words at level one and another 100 at levels two and three. Also included for light relief and variety are words associated with sport. Each bank can be accessed by the Change Word List option on the introductory menu.

You also have the freedom via an in-built Editor program to input your own lists of words which can be used for either spelling or vocabulary extension. This makes the program suitable for almost any age of child.

Jigsawspell is a lovely program which scores high on originality and educational process. However, I would have liked the option of some musical or sound effects reward. The program would also benefit by having spelling input via a letter grid with mouse clicking selection. This would save upper/lower case confusion with younger children.

All in all an excellent and adaptable product which I highly recommend for use with primary school children and slow learners of secondary school age.

FACT FILE

Product: Jigsawspell

Price: £14.95

Supplier: HAT Software, 21 Wyle Cop, Shrewsbury, Shropshire.

Tel: 0743 231763

POINTS FOR:

Does a sound educational job. Trains visual recognition and retention. Allows you to create your own library of picture and word files.

AGAINST:

A letter grid with selection by mouse clicking would save upper/lower case confusion with younger children.



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John Martin assesses
a trio of educational
packages for the ST



Interactively educational

AS the popularity of the Atari ST hardware range steadily grows both in the home and within education, so does the demand for quality educational software. Consequently there have been several attempts by software publishers to meet the needs of a wide range of children, in the main focusing on English and mathematical skills.

Database Educational Software has just launched a range of professionally researched and written educational software packages for a variety of computers under the title Fun School 2. These packages embrace English and mathematical skills, but do so in ways which both demand, and teach other skills such as coordination and logical thinking.

All the software is written in STOS Basic, so STOS owners can therefore customise the programs, sprites, graphics and music to suit individual needs. This is

particularly of value in educational environments where a child's special needs may demand individual emphasis.

It is to the credit of STOS that such professional software packages can be developed. Might not STOS become a common tool within schools for software development?

The current three Fun School 2 packages are: Under 6s, 6 to 8 Year Olds and

Over 8s. Each package is attractively packaged in a robust carton containing two standard single sided 3.5in discs, a durable wipe clean fold-out instruction card and a free badge.

All the packages run on a standard 520ST with a single half megabyte disc drive. As there is a special emphasis on colour and sound, a black and white domestic TV or monochrome monitor would not be suitable and a colour monitor or TV is required.

Surprisingly, the software is not copy protected and the instructions clearly draw the attention of the parent or teacher to the hostile environment in which such programs can be used. Indeed, some simple but often neglected guidelines are suggested such as possibly banning drinks from around the computer.

Each package is auto-booting and both the menu screen and discs are clearly marked with loading instructions. Once the data disc has been inserted there is no subsequent disc swapping. This is very convenient in the classroom, as it eliminates potential data corruption, media damage and general confusion.

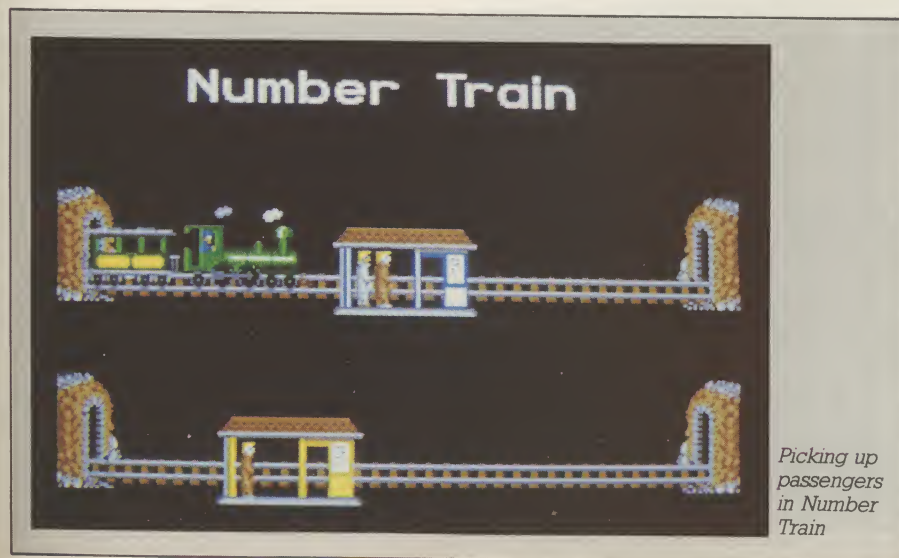
As the Fun School packages are not solely designed for the home, some general suggestions are provided for teachers on ways to best use the packages in situations where pupil-computer access time may be limited.

For example, some of the more demanding programs found in the Over 8s package are ideal for class activities, with several groups each tackling a separate puzzle and reporting back to another which undertakes the final one.

The documentation is clearly written with the necessary information for each component program adequately covered. Each package contains eight program options selected from a colourful and well drawn menu screen. Keyboard commands are standard across each package with the spacebar and Return keys being the commonly used methods of passing instructions.

The keyboard cursor keys are used for movement on screen, or a joystick if avail-

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◀ From Page 99

able. Unfortunately, the mouse cannot be used for on-screen movement within a given program. Full mouse control might have been an interesting option for the over 8s.

Numeric data can be entered from the numeric keypad if desired – a convenient option for the under 6s, where the main keyboard number keys can be confusing.

Simple and effective facilities exist for parent or teacher to modify the difficulty levels for many programs. It is likely that more experienced children will soon pick up how to do this for themselves.

Under 6s

Fun School 2 for the under 6s is the best selection of genuinely educational programs available for this age range that I have seen on the ST. All the screens are colourful and impressively drawn and successful task completions earn musical rewards as well as graphical ones. A notable one, for example, is the mole appearing out of its hole and blinking in the daylight.

Find the Mole presents you with a picture of five numbered molehills. Of all the programs found within this particular package, this proved to be a common favourite, despite the rather small numbers. The purpose is to guess under which molehill the mole can be found and incorrect guesses earn a message suggesting a higher or lower number.

Teddy Count is also a number based program within which the child has to count the dancing teddies. As with all the programs making up the three packages, the animation is smooth and of sufficient attraction to maintain the child's interest.

Shape Snap is a simple shape matching game with an excellent sound effect for incorrect responses. Colour Train demands colour recognition and coordi-

nation skills for stopping a coloured train at the correctly coloured station.

Teddy Bears' Picnic also requires coordination skills and logical thinking in order to navigate a simple maze successfully. Write a Letter and Pick a Letter are both strongly text orientated, with the former providing a hardcopy facility.

Finally, for the under 6s, Spell a Word displays one of 10 simple pictures and the child is asked to spell the word using the normal letter keys. Help is given if a letter is incorrect.

Unfortunately the restriction of 10 illustrated words might soon exhaust the attention of some children aged under 6. However, owners of STOS ought to be able to develop alternative versions of this particular program, so presenting the child with new word challenges.

6 to 8 year olds

The 6 to 8s package presents an interesting range of programs. The instructions accurately point out that educational software for this age range needs to be something of a mixed offering.

Some children are likely to have considerable hands-on experience of computer technology, others little at all. As a consequence, the programs recognise the dangers of inherently demanding considerable keyboard skills and so many do not present direct obstacles of this nature to the child.

Thus this package not only develops the child's knowledge of number and mathematical concepts, reading and language skills, spatial ability and logical thinking, but also keyboard and computer skills.

Number Train is a development of the similar program found in the under 6s package. Colour recognition and timing skills are retained, and mathematical challenges are added.

Shopping encourages coordination

skills, reading and comprehension by presenting you with four shops and a frog, together with a shopping list. Maths Maze again introduces the friendly frog and your task is to direct the frog along the stepping stones, visiting each of the robot guards. Each one presents a mathematical question, and pleasingly, there is no time limit.

Treasure Hunt is a novel departure which requires you to help the frog find buried treasure. A letter and number grid is used for direction and clues are generated of the Cold, Warm or Hot variety.

Bounce encourages coordination and logical thinking, the aim being to bounce a ball such that it hits an apple. The ball holder can be moved left and right and tilted as desired by the child. A simple but challenging program.

Packing presents the child with a rectangle and a set of shapes which need to be placed accurately within it. As with many of the programs, there are differing levels of difficulty involving more complicated shapes and positioning.

Caterpillar is a word based game in which you guess a word by typing in a letter. If it is correct it is put in its correct position, or positions, in the word. A caterpillar moves nearer to an apple and when the word is completely spelt out the apple is eaten.

Number Jump is an interesting means of testing multiplication knowledge and understanding. The child has to guide a frog across the pond by stepping only on those lily pads with multiples of the displayed key number.

An incorrect move ends up with a sinking frog and an excellent sound effect. Four levels of difficulty collectively present challenges from multiples of 2 to 9.

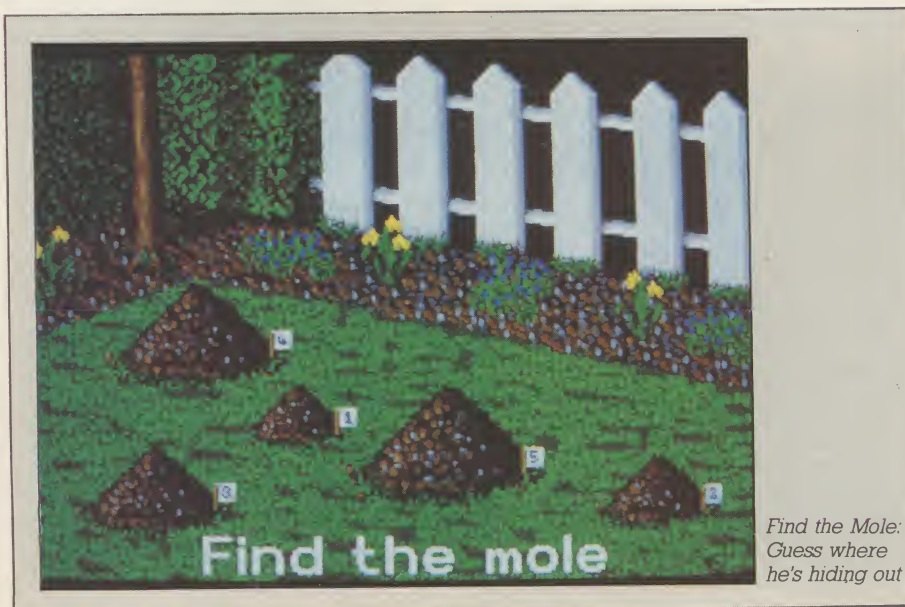
Over 8s

This set of programs offers a wide range of extremely challenging puzzles. Seven of the eight are self contained and can be approached at various levels of difficulty, in any order and in as many sessions as required.

The eighth game, Escape, can only be solved by using keywords gained through successful completion of the other seven. Significantly, as the child becomes more competent within a particular program the tasks automatically advance to the next level.

Build a Bridge presents coloured shapes which you use to build a bridge. A shape is chosen by moving the robot to it, guiding it to the desired position, and then released. At the higher levels the challenge increases dramatically with some shapes displayed which are not required.

Passage of Guardians tests word knowledge and analytical ability through





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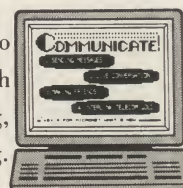
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◀ From Page 100

questions presented via Guardians. A word is displayed in scrambled form and you have to key it in correctly. On the highest level words can previously be entered by parents or teachers so presenting personalised challenges to the child.

Unicorn is a favourite of many children – and adults too. Once solved it is infuriating to realise how the challenge at first seemed insurmountable. The aim is to get a bird, worm and apple to a Unicorn before a forest fire destroys the trees. Restrictions of what can be carried, together with the need to travel a maze, present an excellent challenge.

Logic Doors is perhaps the most difficult program in this package and one which is ideal for a team approach. Mapping is required and clear logical thinking a necessity. Coloured keys are obtained and disposed of in an attempt to navigate the maze to find the keyword.

Souvenirs presents an offbeat challenge to the child in which the aim is to visit all the countries on the map once and to buy a souvenir in each. Unfortunately, of all the programs in the three packages this had the poorest instructions. It is possible to return with too much money, and reference is not given to this fact. A child buying frugally can be disap-

pointed to be instructed that he has spent too little and needs to begin all over again.

Code Boxes is a challenging mathematical puzzle. To open a box the child has to type in the number displayed on it. However, the number is coded and eventually the code has to be understood to gain access to the keyword. This also presented a challenge to some adults.

Finally, Mystery Machine is an excellent puzzle which demands skills and knowledge of many kinds. The aim is to work the machine in the correct sequence in order to receive the keyword. However, the instructions are coded and much thought has to be given to the letters each symbol represents. Fortunately, guesses can be readily changed.

Conclusion

Fun School 2 offers a challenging and interesting series of programs of considerable educational merit. The diverse range and varying levels of difficulty cater for a wide range of abilities, while the facility for modifying the programs from within STOS presents opportunities for the meeting of educational special needs.

In the final analysis, much remains in

the hands of the children using the programs. While valuable support and instruction can be supplied by parents and teachers, it is the child interacting with a given program which stands to benefit by the experience.

These packages certainly offer programs which can facilitate the learning process. It would be good to see further packages released, particularly for the over 8s.

FACT FILE

Product: Fun School 2 – Under 6s

Product: Fun School 2 – 6 to 8 Year Olds

Product: Fun School 2 – Over 8s

Price: £19.95

Supplier: Database Educational Software, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.

Tel: 0625 878888

POINTS FOR:

Bright and colourful. Good sound. Quality educational content. Clear instructions for most programs.

AGAINST:

Some small numbers. Too few words in Spell a Word. Too few items in Shopping Quiz. Poor guide for Souvenir Quiz.

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
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ADVENTURES

Brillig ponders on the penalties of success

Problems solved and pleasures lost

IT really shouldn't come as a surprise to regular readers of this column, but that ace adventure-cracker from Congleton in Cheshire, our old chum R.G.B. Marshall, has struck again. This time King's Quest IV was his hapless victim.

This paragon of problem solving, this rare unraveller of riddles, this – whoops, beginning to sound a bit like the master of ceremonies at an Old Tyme Music hall there – this man has persuaded KQ4 to yield up its subtle secrets before I've hardly managed to load the darn thing into my ST! It's enough to make you weep.

But wait – why should we envy him? No, instead, we should have deep compassion and pity for this poor wretch. Why? Because the various pleasures of adventuring that we lesser lights still experience must surely now be lost forever to RGB.

Let me explain by using a golfing analogy. A scratch handicap player invariably drives straight down the middle, hits his fairway shots to the heart of the green and sinks 40 foot putts, hole after hole. And terribly boring it all must be.

Not for him the joys of wading into the



middle of ponds, swamps and bogs in search of a wayward ball, the delights of visiting every tree, bush and deep rough as you zigzag through every hole on the course, the quickening of the pulse as, on the first tee and witnessed by a large smug-faced group of onlookers, the ball is completely missed while a mighty divot flies through the air.

In the same way, what does RGB know of the unutterable sweetness of solving the first puzzle in a new adventure, the

penny having taken only five hours to drop?

What does he remember of the pleasures of racking your brain until white spots dance before your eyes? How can he ever recapture that thrill of removing the program disc from the drive and biting a sizeable chunk out of it when you suddenly realised that the nail so crucial to completing the game was the very one you threw into the bottomless lake in your third move in the game some eight days ago?

No, such expert solvers of adventures deserve our sympathy. But their loss is our gain – provided they keep on sending in the solutions.

C.J. Turner, from Newtown in Powys, recently decided to send his BBC Micro to the Old Micros Sunset Home for well-deserved retirement and has moved over to a 1040STFM. He uses it mainly for word processing and playing adventure games. One such game in his growing collection is Psychosis' Chronoquest, to whose fiddly protection method and

Turn to Page 106 ►

FISH!

Need a light source in the cab?

- Search the rubbish.

Can't stop the parrot from exploding?

- Open the cage then go West. The parrot will follow, then fly away.

Don't know what to do with the disc in the stump?

- Wear the gloves in the smithy, put the disc in the crucible, hold the crucible in the tongs, then put it in the flames. When the disc has melted put the gold into the mould. To cool it go to the Cool Glade by a safe route then crack the mould with the hammer.

HINTS AND TIPS

SHADOWGATE

Can't get rid of the Wyvern?

- Use the shooting star from the observatory.

Can't get the flute in the garden?

- Wear the gauntlet found in the bucket in the courtyard.

Need the skeleton key from the lake?

- Use the crystal sphere. To regain the sphere, use a torch.

GUILD OF THIEVES

Where is the secret laboratory?

- Stand on the bed in the main bedroom and use the cue to press the top button in the walnut cabinet.

How do I deal with the bank manager?

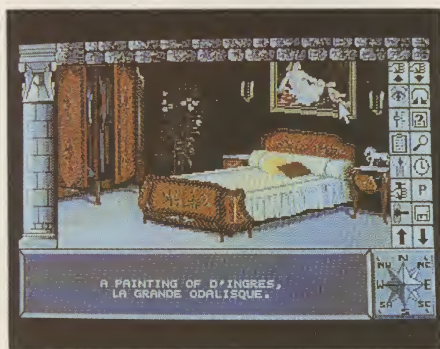
- Say Hooray to the mynah bird until it has learnt to repeat it. Show the plastic card to the teller. In the office, shake the bottle of champagne then drop it with the cage. Having been escorted out, block the keyhole with gum. While the manager is trying to get back in, the mynah bird should say Hooray and the bottle will explode. There is a random element here, so save the game before you try. Then try again until successful.

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extreme difficulty level he strongly objects.

I have to agree with his assessment of the game's level of difficulty, and as I have said before, Chronoquest is not an adventure I would recommend to beginners. Although graphically it is meritorious, this is far from being the easiest adventure to get to grips with, involving too much sudden death for my liking.

Mr Turner stresses that he is a newcomer to the ST adventure scene but is



Psygnosis' Chronoquest is tough

already well and truly hooked. He certainly likes the format of Mindscape's Shadowgate. For the multitude of Shadowgate players who are still working their way through the game this month's hints and tips should be particularly welcome.

Seven-year-old Jimmy Neal has got to Level 3 in Dungeon Master and wants to know how to deal with the rock monsters. Well Jimmy, one way is to lead them back to a gate and keep dropping it on them. This takes a little time, but is probably the safest.

Another method – far more dangerous – is to throw a fireball at precisely the moment they rear up. Medium power poison gas spells may also work.

A letter from 'Arry the 'Acker (aka The Jolly Green Giant Ho! Ho! Ho!) from Manchester – that's how he's signed it – is being driven insane by "that Scarlet O'Hara zombie walking the main hall" in Mindscape's Uninvited.

He says: "When I do anything but go up the stairs or back the way I came she appears and, upon doing anything else, rips me to shreds while I stand frozen. She appears whatever other action I perform; even opening a door causes her materialisation.

"I have tried wearing the amulet found in the mailbox, but the program won't let me. I'm beginning to suspect that I have a duff copy, since all the reviews I have read seem to indicate that it is fairly easy to enter the other rooms leading off the hallway".

Well, 'Arry, I am pleased to tell you that there isn't a bug in your program and that you can now start laughing again because I have the answer you seek. What you

Breakout brings a

Program: Police Quest II

Price: £24.99

Supplier: Sierra Online/Activision, Blake House, Manor Farm Road, Reading, Berkshire RG2 0JN.

Tel: 0734 311666

THE bad news is that Jessie Bains, aka The Death Angel, is on the loose again. The good news, thanks to Activision, is that Bains' escape means that all we Sierra graphics and text adventure fans are in for another splendid treat.

For those of you who haven't met this particularly nasty individual before, let me explain. Bains was the robbing, drug-dealing, cold-blooded murderer that you, police officer Sonny Bonds, tracked down and arrested in Police Quest I: In Pursuit of the Death Angel.

At the end of that adventure, Bains had been packed off for a deservedly long

spell in the chokey. But now this public enemy number one has busted out, taking a jailer as hostage. As a newly promoted homicide detective in Lytton Police Department it's your task in this sequel – subtitled The Vengeance – to get him.

Like the recent Leisure Suit Larry I and King's Quest IV, it features the much improved hi-res graphics. Note, incidentally, that the game will only run on double sided disc drives.



You begin your quest in the office



Mindscape's Uninvited requires plenty of examination

have to do is go up the stairs (the zombie won't appear at this point), at the head of which you'll find a closet.

A close examination here will reveal a small bottle of No-Ghost. Use it on the zombie when she appears – not forgetting to open the bottle first.

'Arry has one other request. A friend of his has reached the end of Infocom's Hitch Hiker's Guide to the Galaxy but still needs the flowerpot – where can he find it?

It's inside the whale. There are two

ways to get it out. You could pick up the pot and use the thumb to hitchhike. The alternative is to put the pot inside the aunt's gift and wait until the whale splats – a few turns later the gift will reappear containing the pot. For those who think I'm spouting utter gibberish, go buy the game and you'll see I'm not.

Finally, several readers, including James Raw from Newcastle, would like some assistance with Rainbird's Guild of Thieves. I am happy to oblige – see Hints and Tips. See you all next month.

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Although I wasn't terribly enthusiastic about Police Quest I, mainly because I disliked that frustrating driving sequence you had to get through in order to move from one part of the city to another, Police Quest II has me totally hooked.

For a start, the driving feature has been replaced by a view from inside your car. All you have to do now is to type "Drive to" wherever you want to go and the car will take you straight there.

The story is gripping and as it begins to unfold you really get caught up in the chase. Graphically, the game is excellent - the locations are beautifully detailed and the animation is realistic. And of course, a Sierra adventure just wouldn't be the same without the liberal helping of humour with which the game is leavened.

The action begins at Lytton police station where the news is flashed through that Bains has gone on the run, taking a prison officer hostage. Before you take off in pursuit you'll need to collect your gun, ammunition and a few other items. You'll

also find it worth while checking out your gunsights on the firing range before taking off - a faulty weapon could cost you dear later on.

Along with your partner, Keith - not the most helpful of mates as he's always nipping off for a smoke somewhere - you set off to the scene of the escape. There you'll want to discover what sort of vehicle Bains escaped in and whether or not he is likely to be armed.

I'm not saying what happens next except that in the early stages of the hunt for the Death Angel - provided you live that long - your quest will take you to Cotton Cove where you'll get more than one unpleasant surprise, including a watery one. Also to Arnie's restaurant where you'll get to dine out and, if you're in the mood, even have a smooching session with your girl friend, Marie Wilkans, and the airport.

If you stroll around the airport there's a very good chance you'll get to meet up with our old friend Leisure Suit Larry. While you're there, check out the blonde with her back turned towards you.

Make sure you carry out some inquiries at the flight and car rental counters, and it's also worthwhile paying a visit to the

gents - and not just to read the graffiti there, either.

There are 300 points to be earned on the way to completing the adventure so you'll need to keep your eyes peeled and your wits sharp. For instance, points are to be gained for cracking the security protection of the police department's computer system, collecting evidence - fingerprints, bloodstains, and so on. Also for reporting your finds back to the department, as well as for making normal progress.

One tip: Two sets of mug shots of Bains should be collected from different locations. See if you can find both.

Police Quest II is excellent in every respect - the graphics, plot, detail, humour and story telling are of first rate quality. And there's music, too.

Sierra is really riding high these days and Police Quest II undoubtedly keeps it way up there as arguably today's finest adventure publisher.

| | |
|------------------------------|---|
| Presentation | 9 |
| Atmosphere | 9 |
| Puzzlement | 8 |
| Value for money | 9 |
| Overall | 9 |

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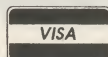
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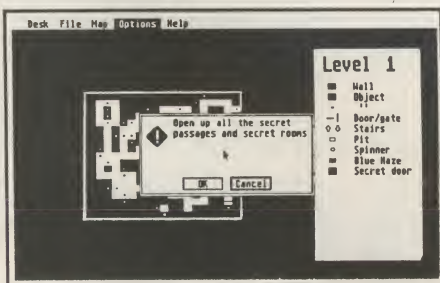
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I HAVE always dreamed of a major win on the football pools but the closest I've got was a £6.23 payout. So the prospect of trying two software packages for the ST that attempt to improve your chances of coming up with that elusive big win was inviting. Apolonia Software's Pools System and Futuresoft's Jackpot 2 were eagerly put to the test.

Looking at Pools System first, my enthusiasm was dampened slightly when I discovered how much information has to be entered into the Poolsbuster program – the match forecasting utility – each week.

On booting up you are presented with a blank screen with a menu bar at the top. Four desk accessories are included – see Figure I – and while these aren't essential to the working of the program they are a welcome bonus. There is a digital clock, calendar, calculator and disc manager.

This last accessory is very useful as it enables you to format discs, create and delete folders, copy, rename and delete files from within any Gem-based application.

Selecting Divisions from the menu bar allows you to load all the divisions into memory. Each season new ones can be created and saved, but this season's are provided ready made.

You then select a division – Division 1 to

Roland Waddilove tries two software packages that claim to improve your chances of winning the football jackpot

start with – and click on Forecast on the File menu. This takes you to the screen shown in Figure II and now comes the data entry section.

Facts and figures are taken from a daily newspaper publishing match results and league tables.

You must first click the mouse on HOME TEAM, pull down the two Division menus at the top of the screen and click on the home team. You then click on POSITION and again on the correct number in the number box on the left of the screen.

Click on HGF (home goals for), enter the data and then on HGA (home goals against) and enter the data. Click on LAST 2 and again on the results table in the middle of the screen. This is

a simple coding system in which HD-AW for instance, would mean home draw then away win for the last two matches.

The process must be repeated for

the away team. Having done this you click on Forecast in the menu bar near the top of the screen.

At the bottom of the screen four graphs are drawn showing the chances of a home win (1), score draw (X) or away win (2) based on position, goal difference, last two game results and the final prediction all things considered.

That's one match done. Now repeat this task for all the matches on the coupon, switching divisions as required. Expect to spend around three to four hours a week entering the data for the matches.

The results can be output to the printer or screen in order of most likely homes, draws or aways.

I didn't have the determination or stamina to spend four hours, week after week, tediously entering data into the program. On the occasions I did use it, I found it to be slightly better than my normal methods of picking draws.

Also on the disc is Pools Planner which enables you to calculate almost any plan you care to dream up. You can create your own or enter popular newspaper ones.

Futuresoft's prediction utility, Jackpot 2, offers similar features. After booting up the software you select Use Fixtures from the Option menu. You can enter the matches on the coupon after first loading the league table from disc – there's one already there, but you can also create your own, say for a new season.

You can skip forward and backward through the divisions and through the fixtures with the function keys. Fixtures

Turn to Page 110 ►

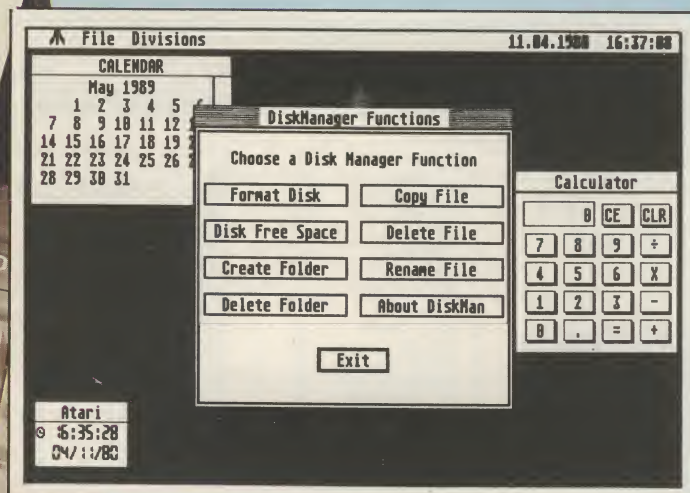


Figure I: The desk accessories available with Pools System

◀ From Page 109

can be edited and deleted. The screen display can be seen in Figure III. All entry is keyboard based.

After entering the data you exit with F10 and save the fixtures. From the Options menu you can choose to calculate and display the most likely homes, draws or aways in ascending or descending order. Figure IV shows the sort of output you can expect to see on the screen.

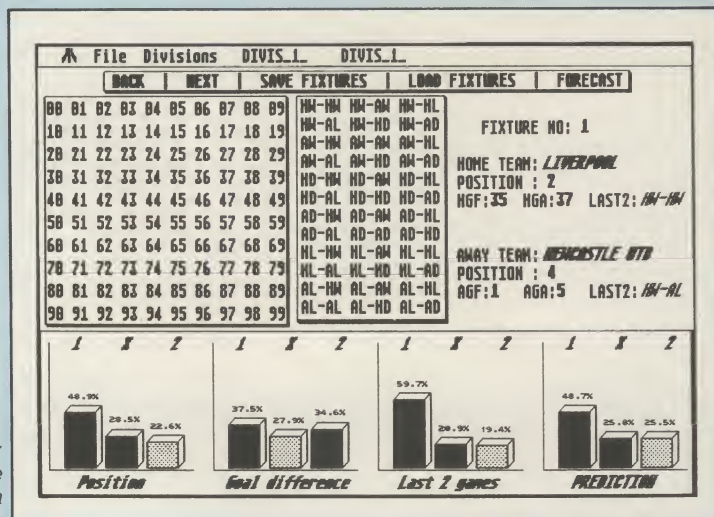
The forecast results are calculated using a formula and more can be created to supplement the ones on the disc. A formula looks like (E+M)-(F+L) where E stands for the home goals for, M is the away goals against, F is the home goals against and L is the away goals for.

There are 14 variables and four operators and you can also include integer constants. It's up to you to discover the best prediction formula, and much trial and error will be required.

Once the match results are known you can update the league table, moving forward and backward through the match fixtures and entering the results.

Like Pools System, Jackpot 2 has the facility to use predefined plans and it also allows you to create your own. You can load and save completed plans, list them,

Figure II:
Predicting the
outcome of a match
with Pools System



check their accuracy, check current lines and so on.

Conclusion

I would have liked to have said I was writing this pools review on my portable ST sitting on a beach in the Bahamas, but unfortunately I'm not and have yet to hit the jackpot.

Both packages say that if you persevere with the systems over a long

period of time – a year or more – you will receive a substantial payout. However, it will require quite a feat of stamina and determination to spend three to four hours a week entering and updating results and league tables.

Both packages are well written and of the two, I found Futuresoft's Jackpot 2 to be slightly easier and less arduous to use. The data entry is keyboard-based and there's less to input.

However, the most important aspect is not ease of use – it's the results that count. On the whole I found them to be better than my previous methods of sticking a pin in a coupon or entering set numbers. I'll bring you an update after I've tried them for a full year.

Figure III:
Creating the
fixture list with
Jackpot 2

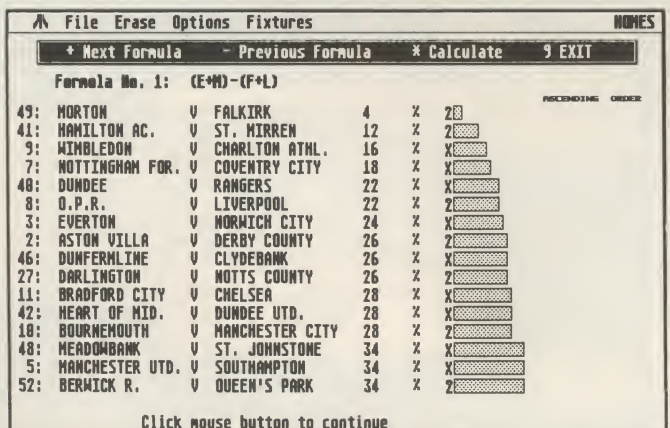
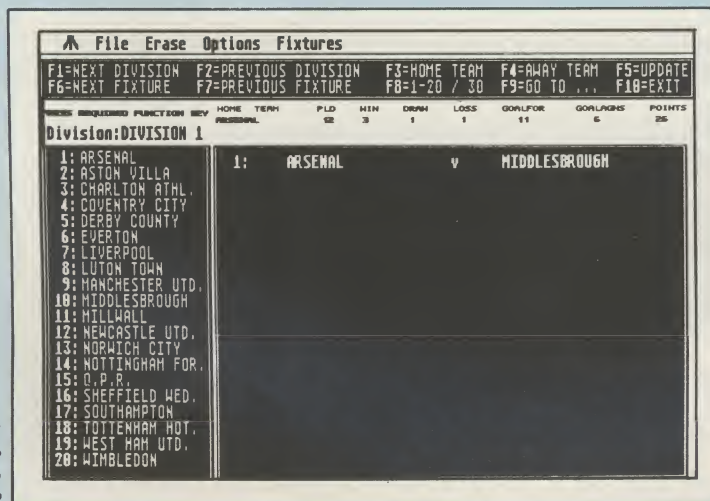


Figure IV: You
can calculate the
most likely homes,
draws or aways
with Jackpot 2

FACT FILE

Product: Pools System

Price: £40

Supplier: Apolonia, Southbank Business Centre, Unit 25 (M), Thames House, 140 Battersea Park Road, London SW11 4NB. Tel: 01-976 2280

POINTS FOR:

Easy to use. Graphical output of results forecast.

AGAINST:

Data entry can be tedious. Expensive.

FACT FILE

Product: Jackpot 2

Price: £39.95

Supplier: Futuresoft, 8 Pump House, 49 Greenwich High Road, London SE10 8JL. Tel: 01-469 3306

POINTS FOR:

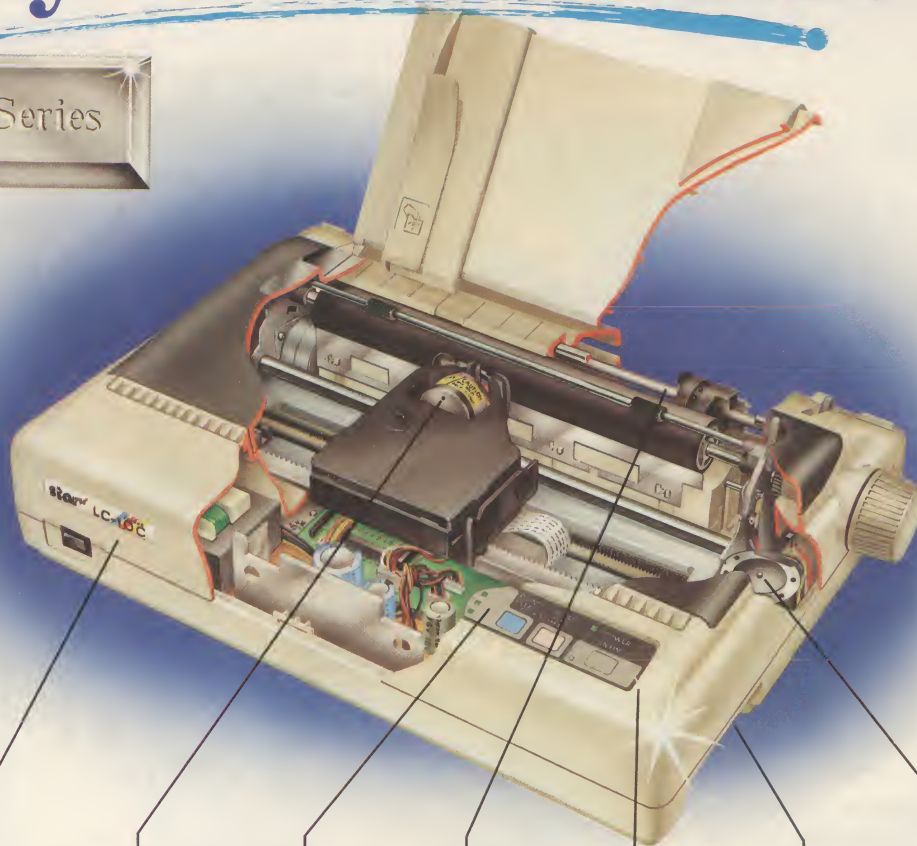
Easy to use. Facility to create your own forecasting formulae.

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Independent User Group

ALTHOUGH the ST is a very capable machine in many respects, it is often criticised over the poor quality of its sound output, especially when compared with the excellent stereo audio facilities of its rival, the Amiga.

Atari has been promising us the fabled ST Plus for years now, and perhaps one day it will actually see the light, but in the meantime American company Practical Solutions has come up with an ingenious add-on board which will provide full stereo sound from your 520ST.

To understand how this amazing feat has been accomplished we must first look at how sound is created with an ST, for it is not as simple as many people think. Unfortunately, you can't ask a general purpose chip like the ST's YM2149 PSG to play a particular tune or to reproduce a chord, because every sound we hear is made up of individual components.

A simple chord, for instance, will be made up of two or three separate notes which must be played simultaneously.

To achieve the desired result, the Yamaha sound processor chip inside the ST must be programmed for each note separately, and will continue to play them until it is told otherwise. It has three fully independent sound channels, each of which may be given a single note to play. When combined by the audio circuitry we hear the full chord.

The same method is used to create sound effects, but instead of just a pure tone the chip must overlay complex patterns of noise. These may then be combined in the same way as musical notes to make the complete explosion, gunshot, mega-zap death ray or whatever other outlandish cacophony is required.

The problem has always been that there is only one sound chip in the ST, and although it has three of these voices, they are all channelled together through a single audio output – either from your television loudspeaker or via the monitor port.

Without fitting an extra Yamaha device, there would seem to be no simple way to provide true stereo output. Even if there was, no existing software would drive it properly, and it would be a long time before publishers started to accept and support the new standard.

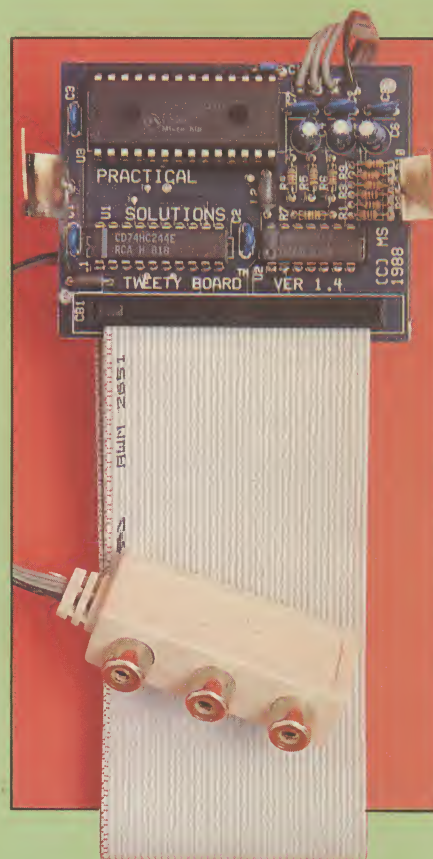
What Practical Solutions has done is to split up the existing three sound channels and bring them out to independent phono sockets ready for connection to an external amplifier. This does rather presuppose that your amplifier has three channels – a trinophonic system? – but they thoughtfully provide a Y-adaptor cable to allow you to use a conventional stereo unit if you prefer.

Fitting the board

As the three audio signals are normally combined within the ST's main circuit board, the Tweety unit is supplied with a plug-on rider which fits snugly over the 40-pin Yamaha chip. There are no other

Let the rafters ring

André Willey beefs up his ST's sound output with a Tweety Board



connections to be made, and all power for the device is drawn from this one connection.

A nine inch ribbon cable connects the rider to the main Tweety Board – which is quite compact at about two and a half by two inches. A further 12 inch cable then links up to the three phono sockets which are formed into a custom made block.

Fitting the device is relatively straightforward, and the instructions are clear and concise for each type of ST. Every step is explained in detail and supported by the relevant diagrams. Don't forget that it does require that you dismantle

your computer, so it's as well to ask a professional engineer for assistance if you are at all unsure.

Once you've taken off the outer casing of your micro you will have to remove the internal metal shielding covering the main motherboard. This is normally accomplished by bending the locating tabs a little, although some machines also have a blob or two of solder which must be removed.

If your ST has a built-in disc drive it is possible that you could fit the board without removing the metal shielding just by moving the drive mechanism out of the way. However, there are so many variations of the motherboard design that there is really no hard and fast rule. If in doubt, remove the shield completely.

Once you have gained access to the Yamaha sound processor chip you must fit the Tweety connector over the pins, and press it down firmly. An adhesive pad is supplied to prevent the connector from slipping, but I'm a little dubious as to how well this would stand up to heavy handling – move the ST heavily, or worse still drop it, and the connector could well become dislodged.

That said, I have to admit that mine worked perfectly, showing no tendency to slip or move even after I had carted the micro across the room to link it to my hi-fi system. Anyway, a blob of solder on the four corner pins should make the connection pretty secure if you do have any problems.

The Tweety Board itself also has a sticky pad underneath, and this should be used to secure it to a convenient site inside the casing.

The obvious place on my machine was the gap where a modulator would otherwise have been fitted, but the instructions don't warn you about how difficult it will be to get the ribbon cable past the disc drive connector. A better alternative might be to site it a little further forward and stick it on top of the ram chips.

The audio connector sockets can then be run out from the ST beside the modem port, or holes could be drilled for them if you prefer. Once this has been done you can reassemble your micro.

Stereo games

So how well does the system work? Well it rather depends on the software you are using. Obviously music programs which allow you to control the three voices separately give the best results, allowing you total control over the final blend of sounds.

Most other software will have been designed with a single speaker in mind, so might not split up very well, although in most such cases I found that altering the way the Y-combiner plug was used could give some pretty good results.

It would have been nice if some more

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thought had been given to this aspect of the device, as continually changing plugs over could get a little tiresome. Perhaps someone could design a neat little switch box with three fader controls on it?

This could then be used to adjust the left-right balance of each of the three channels, and provide the resulting twin outputs ready for linking into a hi-fi system.

As it is, the best sound came from games which used two of the channels for music and the third for sound effects. By adding one of the music channels to the effects channel and routing it to one speaker – and leaving the second music channel connected to the other speaker – a very powerful, if somewhat forced, feeling of space was created.

I was particularly impressed with the overall quality of the sound generated – each channel was clear and crisp, with almost none of the normal buzzing interference associated with processor activity. The frequency range and depth of sound achieved with a decent amplifier were astonishing – particularly with well written software.

By this time I was getting a little carried away so I decided to try out all three channels at once. I connected the A and C outputs to my hi-fi system, and the B output to my television's external speaker. Then I loaded up Starglider...

The results were amazing. All of my laser fire seemed to come directly from the screen ahead, whilst explosions and hits on my shields reverberated all around my head. The effect – or was it the volume? – even aroused the interest of the rest of my family, which is something of a first.

The only aspect which didn't work very well – and to be fair the instructions did warn me – were the digitised voices. Since digitised sound is made up of tiny pieces of noise, rapidly switched between the three audio channels, the results when played from three different directions are somewhat confused. Also the vastly extended frequency response allowed the high speed switching buzz to be heard.

Conclusion

A Tweety Board is a must for any dedicated games player, always

assuming you already own a decent stereo system. After fitting one you will quickly wonder how you ever managed to play games using that pokey little three-inch speaker built into your monitor.

At around £50 it gives excellent value for money and should be a sure-fire hit with most ST owners. Games companies should also take note, and design their future music and sound effects to take advantage of this excellent product.

FACT FILE

Product: Tweety Board

Price: £49.95

Supplier: Practical Solutions, 1930 East Grant Road, Tucson, Arizona 85719 USA.
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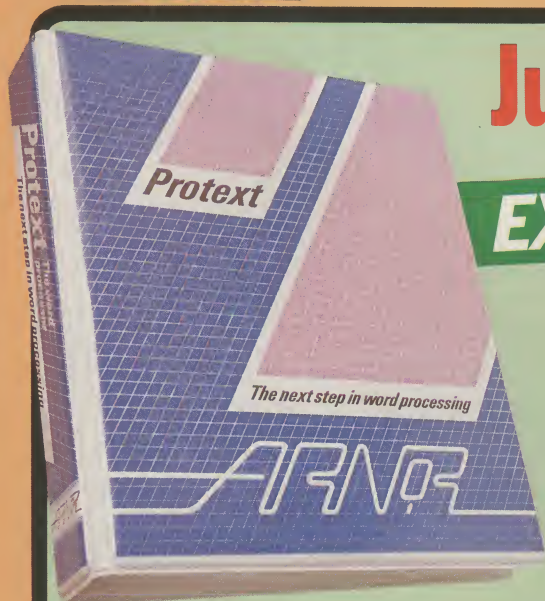
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THERE are many art packages for the ST – a new one seems to come along almost every month – and while this may be good news for the computer graphic artist, each tends to have its own peculiar way of saving the picture.

Fortunately, most packages will accept more than one picture file format, but even so problems can arise, as Sod's Law states that the art package you want to use can't load the picture you want to look at.

One particular picture format that can cause problems is found in IMG files. The only art package that can read and write this file format is Atari's Hyperpaint. However, Kempston's Daatascan hand scanner produces IMG format images and Electric Distribution produces two discs of clipart for you to include in your own pictures.

If you've got Hyperpaint and plenty of ram all your problems are solved, as you can easily access IMG files by selecting them from the menu. But if you haven't,

Load and manipulate large IMG files with this handy Basic utility from Julie Boswell

you're stuck. (Hyperpaint will only display quite small IMG files on a 520ST due to a lack of memory, and large images can't be loaded).

This is where Converter comes in. It enables you to load and examine high resolution monochrome IMG format pictures and then save them in Degas form with a PI3 file extension. It works on any ST and can display massive images even on a 520ST.

IMG format pictures can be any size and are not restricted to the limitations of the monitor screen – it's possible to have images over 1,500 pixels high and 1,000 wide.

Converter will load these pictures and allow you to scroll them using the cursor

keys so that the screen becomes like a window looking on to the picture. You can select and save any screen-sized portion of the image as a Degas high resolution picture with a PI3 file extension.

The program is written in HiSoft Basic – the same as Power Basic – and should be compiled to disc to produce an executable file. To use it double click on it from the desktop and choose the IMG file to display using the file selector.

The screen will clear while the picture is loaded and processed. This can take a minute or two for very large images, so be patient. When the job is done the picture will be displayed on the screen.

If you can't see all the picture because it is larger than the monitor screen display use the cursor keys to scroll it. Press S to stop. An alert box will then pop up and ask whether you want to save the screen as a Degas picture. Click the mouse on Yes or No.

If you opt to save the screen the same filename will be used but the file extension will be changed to PI3. Only what is displayed on the monitor screen will be saved.

The program allocates a massive 200k buffer to store the IMG file, which should be enough for most applications. To cope with bigger pictures increase the variable *maxy&* at the start of the listing, or if you are short of memory, decrease it. Remember that you must compile the program to disc.

Picture this saving grace



The picture is decoded and displayed on the screen

The IMG file header

The file structure of IMG files is rather unusual and not at all like the Neochrome or Degas formats. Each IMG file has a short header which provides a few technical details about the picture. The format is:

| Word | Contents |
|------|---------------------------------------|
| 0 | IMG version number |
| 1 | Header length in words |
| 2 | Number of planes |
| 3 | Pattern length |
| 4 | Source device pixel width in microns |
| 5 | Source device pixel height in microns |
| 6 | Scan line width in pixels |
| 7 | Number of scan lines |

The picture information starts at the end of the header and the header length is stored in word one. The number of planes in word two tells you which screen mode the picture was saved in. A value of one indicates high resolution monochrome, two is medium resolution colour and four is low resolution.

The pattern length in word three I'll explain shortly, but you'll find the value is normally two. The source device pixel size isn't important so these values can be ignored. The last two items of data con-

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The cursor keys can be used to scroll the rest of this image through the screen

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tain the number of pixels per scan line and the number of lines making up the picture. The image is made of many horizontal rows of pixels called scan lines.

The monochrome screen is composed of 400 scan lines each 640 pixels wide. The picture in the IMG file can be any size and may possibly have 1,500 scan lines of 800 pixels, or perhaps only 50 scan lines of 100 pixels. Convert looks at words six and seven in the header to find out how big the image is.

It's worth noting that Hyperpaint extends the header by an additional 17 words in order to store the current palette with the picture.

On now to the structure of the mono-

chrome picture in the IMG file. The image is stored as a series of scan lines – horizontal rows of pixels.

The pixels are coded in one of three different ways – a solid run, pattern run or bit string. A scan line may be repeated up to 255 times.

A solid run consists of a single byte. This means that the pixels in the following screen bytes are either all on or all off. Bits zero to six hold the number of bytes for which this is true and bit seven determines whether the pixels are on or off. For example, if the byte is 131 – or 1000011 in binary – there would be three bytes of 255 or 11111111 in binary.

A pattern run consists of a number of pattern bytes and the number of times they should be repeated. Word three of the header tells you how many bytes

make up the pattern and this is normally two.

A pattern run consists of four bytes. The first is zero, the second is the repeat counter and the third and fourth contain the pattern.

| Byte | Contents |
|------|---------------------|
| 0 | Zero |
| 1 | Run length |
| 2 | First pattern byte |
| 3 | Second pattern byte |

A bit string is indicated by a byte of \$80. The next byte is a counter which tells you how many bytes follow and these should be read and placed in the screen memory.

| Byte | Contents |
|------|-------------|
| 0 | \$80 |
| 1 | Byte count |
| 2 | Image bytes |
| ...n | |

In addition to this a number of scan lines may be repeated and a replication count can be included. This consists of four bytes. The first two are zero, the third is 255 and the fourth is the replication count.

| Byte | Count |
|------|-------------------|
| 0 | Zero |
| 1 | Zero |
| 2 | \$FF |
| 3 | Replication count |

If you look at the first byte when decoding the IMG file data you can tell what follows. For instance, a value of \$80 indicates a bit string, any other non-zero value is a solid run and zero itself is either a replication count or a pattern run. In the last case you have to examine the next byte – if it's zero it is a replication count, otherwise it is a pattern run.

```

10 REM IMG Converter
20 REM By Julie Boswell
30 REM HiSoft Basic
40 REM Don't enter line numbers
50
60 LIBRARY "GEMAES"
70 LIBRARY "XBIOS"
80
90 WINDOW FULLW 2
100 CLEARW 2
110
120 maxy%=2000 : width=100
130 buffer$=STRING$(100*maxy%+100,0)
140 file$=FNfilename$
150 OPEN "I",#1,file$,1
160 version%=FNword
170 header%=FNword
180 planes%=FNword
190 patlen%=FNword
200 widthpix%=FNword
210 heightpix%=FNword
220 width%=FNword
230 height%=FNword
240 IF height%>maxy% THEN height%=ma
xy%
250 CLOSE #1
260
270 OPEN "I",#1,file$,1
280 FOR i%=1 TO header%*2
290 dummy$=INPUT$(1,#1)

```

```

300 NEXT
310
320 buffer%=(SADD(buffer$)+1) AND &H
FFFFFFFE
330 y%=0:repcount%=0
340 DO
350 dummy$=INKEY$
360 A%=buffer%+100*y%
370 F%=ASC(INPUT$(1,#1))
380 IF F%=0 THEN
390 F%=ASC(INPUT$(1,#1))
400 IF F% THEN CALL pattern_run ELSE
dummy$=INPUT$(1,#1):repcount%=ASC(INP
UT$(1,#1))
410 ELSE
420 CALL scanline
430 IF repcount% THEN CALL copy:repc
ount%=0
440 END IF
450 LOOP UNTIL y%>=height%
460 CLOSE #1
470 CALL display
480 CALL picsave
490 SYSTEM
500
510 SUB picsave
520 SHARED file$
530 alert$="[2][Save Degas picture][
Yes|No]"
540 MOUSE 0

```

```

550 button%=FNform_alert$(1,alert$)
560 MOUSE -1
570 IF button%=2 THEN EXIT SUB
580 screen%=FNlogbase&
590 i%=INSTR(file$,"")
600 file$=LEFT$(file$,i%)+PI3"
610 OPEN "R",#1,file$,1
620 FIELD #1,1 AS pad$
630 LSET pad$=CHR$(0) : PUT #1
640 LSET pad$=CHR$(2) : PUT #1
650 LSET pad$=CHR$(7) : PUT #1
660 LSET pad$=CHR$(119) : PUT #1
670 FOR i%=4 TO 33
680 LSET pad$=CHR$(0) : PUT #1
690 NEXT
700 FOR i%=screen% TO screen%+31999
710 LSET pad$=CHR$(PEEK(i%)) : PUT
#1
720 NEXT
730 CLOSE #1
740 END SUB
750
760 SUB scanline
770 SHARED x%,F%,width%,y%
780 x%=0
790 DO
800 IF F%=0 THEN CALL pattern_run
810 IF F%&H80 THEN CALL bit_string

```

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◀ From Page 119

```

820 IF F%>0 AND F%<>8H80 THEN CALL solid_run
830 IF (x%<width%8) THEN F%=ASC(INPUT$(1,#1))
840 LOOP UNTIL x%>=(width%8)
850 INCR y%
860 END SUB
870
880 SUB copy
890 SHARED y%,repcount%,x%,A%,buffer%,height%
900 DECR y%
910 FOR i%=1 TO repcount%
920 FOR i&=A% TO A%+99
930 POKEB i&+100,PEEKb(i&)
940 NEXT
950 IF y%<height% THEN INCR y%
960 A%=buffer&+100*y%
970 NEXT
980 END SUB
990
1000 SUB pattern_run
1010 SHARED A%,x%
1020 runlen%=ASC(INPUT$(1,#1))
1030 patbyte1%=ASC(INPUT$(1,#1))
1040 patbyte2%=ASC(INPUT$(1,#1))
1050 FOR i%=1 TO runlen%
1060 POKEB A%+x%,patbyte1%
1070 POKEB A%+x%+1,patbyte2%
1080 x%=x%+2
1090 NEXT
1100 END SUB
1110
1120 SUB bit_string

```

```

1130 SHARED A%,x%
1140 runlen%=ASC(INPUT$(1,#1))
1150 FOR x%=x% TO x%+runlen%-1
1160 byte%=ASC(INPUT$(1,#1))
1170 POKEB A%+x%,byte%
1180 NEXT
1190 END SUB
1200
1210 SUB solid_run
1220 SHARED F%,A%,x%
1230 IF (F% AND 8H80) THEN byte%=&HFF
ELSE byte%=0
1240 count%=F% AND 127
1250 FOR x%=x% TO x%+count%-1
1260 POKEB A%+x%,byte%
1270 NEXT
1280 END SUB
1290
1300 DEF FNword
1310 FNword=256*ASC(INPUT$(1,#1))+ASC(
INPUT$(1,#1))
1320 END DEF
1330
1340 SUB display
1350 SHARED buffer%,height%,width%
1360 DIM code%(25)
1370 mcode%=VARPTR(code%(0))
1380 FOR i%=0 TO 43
1390 READ byte$
1400 POKEB mcode%+i%,VAL("&H"+byte$)
1410 NEXT
1420 y%=0:x%=0
1430 DO
1440 buf&=buffer&+100*y%+x%
1450 CALL LOC mcode%,buf&
1460 key%=INP(2)

```

```

1470 IF key%=200 AND (y%+392)<height%
THEN y%=y%+8
1480 IF key%=208 AND y%>0 THEN y%=y%-8
1490 IF key%=205 AND x%>0 THEN x%=x%-2
1500 IF key%=203 AND (x%+80)<(width%8) THEN x%=x%+2
1510 LOOP UNTIL key%=115 OR key%=83
1520 END SUB
1530
1540 DATA "3F","3C","00","02"
1550 DATA "4E","4E","54","8F"
1560 DATA "22","40","20","6F"
1570 DATA "00","06","20","50"
1580 DATA "30","3C","01","8F"
1590 DATA "24","48","32","3C"
1600 DATA "00","13","22","DA"
1610 DATA "51","C9","FF","FC"
1620 DATA "D1","FC","00","00"
1630 DATA "00","64","51","C8"
1640 DATA "FF","EC","4E","75"
1650
1660 DEF FNfilename$
1670 MOUSE 0
1680 path$="A:\*.*"
1690 name$=""
1700 ok%=0
1710 fsel=INPUT path$,name$,ok%
1720 WHILE right$(path$,1)<>"\"
1730 path%=LEFT$(path$,LEN(path$)-1)
1740 WEND
1750 MOUSE -1
1760 CLEARW 2
1770 FNfilename$=path$+name$
1780 END DEF

```

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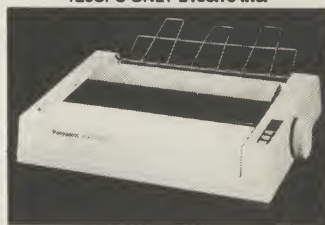
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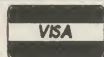
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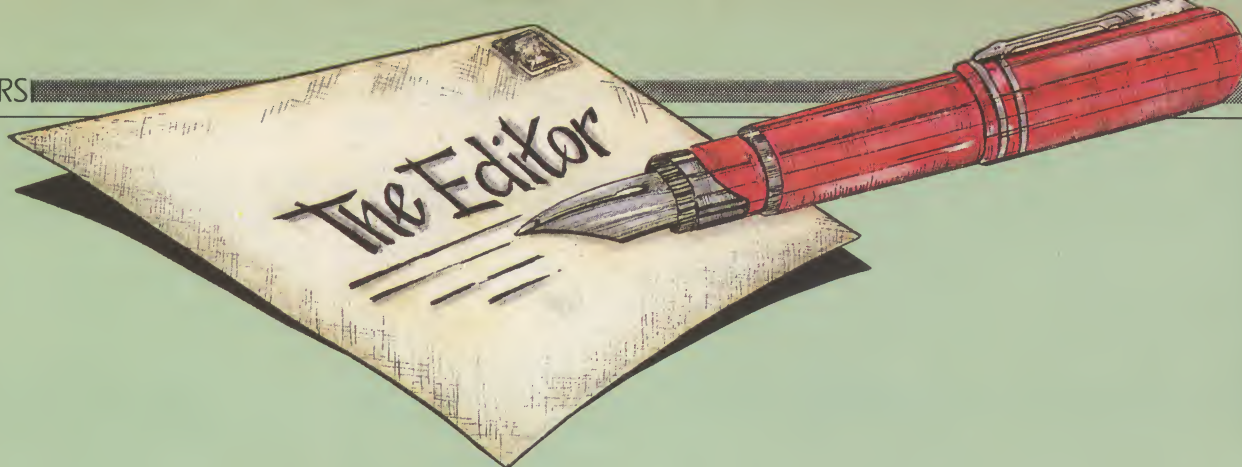
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Availability of Stateside PD

COULD you please advise me where I can obtain copies of the educational titles mentioned in April 1989's *Atlantic Crossing* article?

They look very good and as two of my children are both starting to use the ST for more than playing games I feel that they would be of great assistance in their education. – **R. Wilson, Wolverhampton, West Midlands.**

● By the time you read this, most PD software libraries in the UK – including Forest Computers and Softville PD – should have copies of all 16 of Dorothy Brumleve's excellent educational public domain programs.

Elite special assignment

FROM time to time in your *Letters* page I see people enquiring about different printer drivers, and wonder if they ever get any satisfaction.

I have edited the Epson LX driver supplied with 1st Word Plus to drive my Panasonic KX-P1080 and now enjoy all

the features which this printer offers. To the best of my knowledge, it should also be fully compatible with the KX-P1081 and KX-P1082 machines.

I would be more than willing to supply a copy to anyone who sends me a blank single or double sided disc, along with a stamped addressed envelope. If required I can provide information as to how to install it as the default printer, although it is pretty well documented in the instruction manual provided with 1st Word Plus.

I have also read some correspondence about booting from drive B. I have a copy of a public domain program B-Boot for just this purpose, and again would be willing to provide copies on receipt of a blank disc and stamped addressed envelope.

In February's *Letter of the Month* Andrew McDonald provided some useful hints and tips for players of *Elite*. I agree entirely with him about the documentation supplied with the game, it is exactly the same as that provided with the BBC Micro version with the exception of the screenshots.

However, unlike him, I have just come across my first special assignment, so they definitely do exist. For his, and others' guidance, my present status is Competent, with just over 70,000 points accrued.

I am on the third galactic chart, and on docking at the planet Anreer, was offered, and have accepted, the mission (whether or not I carry it out successfully

remains to be seen!).

If he makes his way to this planet, hopefully he too will be offered this special assignment, and the best of luck to him. – **Martin Cairney, 11 Dornoch Way, Cairnhill, Airdie ML6 9XQ.**

The right Scart connection

LAST summer I bought an Atari 520STFM and have recently bought a Sony KV-P14U television, partly for use as a second TV, but primarily as a monitor.

The Sony has a 21-pin Scart connector and I have tried various cable connectors between the Scart and monitor jack on ST. However, I always get the same result on the TV screen – good picture resolution, but a regular screen jump of about 2.75 seconds which makes the picture completely unwatchable.

A phone call to Sony evinced the reply that its Scart connector was standard. A call to Atari produced the comment that an ordinary 13-pin din plug/21-pin Scart plug such as that suitable for a Philips TV would fit the bill. It doesn't.

Do you know whether this particular computer and TV Scart are incompatible? Is a special connector lead available, or can modifications be made to a conventional one?

Any guidance you could give me would be greatly appreciated, before I sink out of sight in a morass of confusing and conflicting information. – **T. Wellerman, Upton, Chester.**

● There is no obvious reason why a Scart connection between your ST and the Sony colour TV/monitor should not produce a crystal clear and steady picture.

We can only suggest that you try different combinations of STs (try borrowing a friend's) leads and TV/monitors. The problem most likely exists at one of the sockets at either end of the lead.

We use a Fidelity CTM and a Sony KX 14CP1 colour monitor. Both use Scart connectors and they operate with no problems.

As an interim measure you can get a reasonable picture by connecting your ST to the TV/monitor via a lead from the ST's TV Out socket to the aerial socket on the TV/monitor.

The tortoise and the hare

IT may be that as I approach retiring age my thought processes are slowing down.

I have bought a copy of *Fast Basic* and after several attempts I have been unable to make the language load automatically when the 520ST is reset with the disc in the drive.

The nearest I have managed is the following, which while obvious to some may be of use to others:

- ☐ Make a disc copy of the original disc as instructed.
- ☐ Insert the copy into the drive and reset the computer.
- ☐ When the desktop appears on

screen double click on the icon FLOPPY DISC A.

☐ When the icons of the folders and so on appear using the lower grey bar position the icon FASTBAS.PRГ so that it is easily seen.

☐ Pull down the options menu and double click on Save Desktop.

The next time you reset your computer with the disc in the drive the icon FASTBAS.PRГ will appear on the screen and all you have to do is double click on it to be up and running.

Maybe it's too elementary? – **D. Dowling, Rossendale, Lancashire.**

Star Game for a Star Letter

Each month we'll select a letter of the month and the sender will receive the program which our reviewers have rated Atari ST User Star game. This month, reader Keith Maddocks will receive *Typhoon Thompson*, which is reviewed on Page 20. Letters on every subject of interest to Atari ST users are welcome. Send them to: The Editor, Atari ST User, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.

Pride and prejudice

MAY I reply to the letter from Ms Fiona Reynolds published in your April issue. On a first reading I was inclined to dismiss it as an hysterical screech from yet another self-appointed guardian of the public's welfare. However, on reflection I became increasingly incensed at the false assumptions, innuendoes and arrogant holier-than-thou attitudes implicit in its contents.

I find intolerably offensive her accusation that anyone buying such games as *Hollywood Strip Poker* and *Teenage Queen* is ipso facto a dirty old man. I buy such games if their content and playability warrant their asking price.

May I say that I am a chartered engineer holding a senior staff post with one of the UK's foremost electronics companies. For many years I have travelled the world on behalf of my employer, installing projects of great benefit to the health and social infrastructures of many poor, less technically developed countries.

I would claim that this has devel-

oped in me a tolerance of other peoples' views and activities that your correspondent seems to lack. I confess I may be old by Ms Reynolds's standards, having just celebrated 25 years of happy marriage.

My computer is an essential tool to me, but I use it for relaxation and entertainment as well, and I insist on my right, as a mature, responsible adult to choose my own software to buy without being dictated to by busybodies.

She goes on to claim that such games are "pushed at young and innocent children" without bothering to give any evidence.

At the Atari Christmas Show in November 1988 I witnessed a salesman refusing to sell *Strip Poker 2* to a 13-year-old boy on the grounds that it was a game for adults, an action hardly consistent with her ludicrous claim. All the salesman received for his pains was a mouthful of abuse and filthy language from this particular "young and innocent child".

Her concern at the "anti Russian" propaganda is laughable, and I suspect, deliberately naive. Throughout recorded history mankind has always been tribal in outlook, and in my opinion, will always be so. Regrettable, perhaps, but a fact of life.

If computer games had existed 60 years ago the enemy would have been dagoes, yellow-men and savages. One hundred years before that it would have been Frenchies and shifty Spaniards. In short, the Russians are simply the flavour of the month, along with the Vietnamese, (Rambo, Platoon et al) and others.

The British are not excused from being the enemy - see *Sub-Battle Simulator* and *Bismarck*. The American Civil war is currently being refought in UMS. If mankind is ever lucky enough to meet up with extraterrestrials will the massive flood of alien shoot-'em-ups have to be hurriedly banned?

For all her stern morality, Ms Reynolds is in favour of *Speedball* featuring uninhibited violence and *Garfield* starring a cat who's main attributes are greed and laziness.

Ms Reynolds, may I remind you of the old adage "One man's meat ...". My taste in software - which includes such titles as *Flight Simulator 2*, *Leaderboard*, *Colossus Chess X* - is no more moral than yours. The difference being that I do not seek to impose my prejudices on others by preventing them exercising their freedom of choice. - **Keith Maddocks, Southsea, Portsmouth.**

Grey import that failed

I READ with interest your piece in March's issue regarding "grey imports" of Star printers. In January I bought a Star LC24-10 printer from Gultronics of Tottenham Court Road, London, for use in my business in printing invoices and so on.

I should have become suspicious when I opened the printer and found it had a moulded continental 2-pin plug on the end of the cable. About one month after buying it, the printer became faulty and I returned it for repair.

Before I sent it back, and before reading your News article in the March issue, I looked at the printer's serial number plate purely out of interest. Imagine my surprise to find that it was written in German and was supposed to run on a

220 volt supply.

Full credit to Gultronics, the printer was repaired promptly and I was told that the power supply had been faulty and was replaced. The 2-pin plug was removed but a 3-pin wasn't put in its place, which meant that I had to buy one, on top of the 2-pin to 3-pin adaptor that was necessary initially.

Since then I have had no problems with the printer but it still cost me a great deal of inconvenience while waiting for the repairs. Perhaps I should count myself lucky that the effects were no more serious than inconvenience.

Even after reading your article I would have to come down on Star's side in this case. In future I shall certainly be more careful about who I buy from and I shall check goods before I accept them. - **J. Harbour, Harrow Weald, Middlesex.**

● Although we appreciate and sympathise with your problem regarding the Star printer, we should perhaps clarify

one misconception: There is absolutely no reason why a printer with a 220 volt rating should not work perfectly well on the British 240 volt supply, despite some press reports to the contrary.

Designing with a megabyte

I OWN a 1Mb Atari ST and am considering buying a copy of *GFA Draft Plus*. I would like to integrate it with *Timeworks DTP*. However, in your June 1988 review of *Draft Plus* it was mentioned that there were memory problems in taking a snapshot of the screen.

Can you tell me whether this is still the case or has the problem been rectified? Alternatively, can you recommend any other CAD programs available in the

Turn to Page 124 ►

◀ From Page 123

same price range? – **Ewan Campbell, Forfar, Tayside.**

● The problem only exists with 520STs. As with most CAD packages, a 520STFM can run out of memory when creating large designs and trying to run other utilities or accessories at the same time.

You shouldn't experience any problems with a 1040ST as there is more than twice the free memory available.

Archimedes link up

I SPEND a great deal of time producing documents on the ST with 1st Word Plus. As I teach in the local comprehensive school I have access to the full range of Acorn computers and numerous printers. I am interested in finding a means to transfer files in order to use the printing and computing facilities in school.

Is it possible to format a disc on the ST so that 1st Word Plus files produced on the ST can be loaded into an Acorn Archimedes 310 also using 1st Word Plus software?

I have heard that someone may have cracked this particular problem. In addition I would also like to be able to transfer Logistix files. Are there other possibilities for transferring these files between the systems, other than buying an Archimedes? – **Mike Miner, Brampton, Cumbria.**

● By connecting the ST's RS232 port to the Archimedes serial port with an appropriate cable – null modem – you should be able to transfer 1st Word Plus files between the two micros provided they are saved in Ascii form, though document files may be incompatible.

Equally, with the aid of a simple transfer program you should also be able to send Logistix files in Ascii form from your ST to an Archimedes.

Another method of transfer is by connecting modems to the two machines and sending the files via MicroLink.

Touch typing tutor needed...

DOES any reader know of a good typing tutor for the ST? I get by at the moment with two or – if I get a whizz on – three fingers. But having just set up in business, I'm finding that I sit in front of my ST nearly all day.

The business at present can't justify paying for a professional secretary and I don't have the time to go to evening classes, partly due to the hours I have to work. I do, however, find the odd hour

The corner for cheats

MAY I say how much I admire your magazine. It is excellent on all but one point. Where are the cheats, tips, pokes and so on?

Several of my school chums have commented on this subject and we all think that they would bring your magazine more readers. What do your readers think about the point? Will you be introducing cheats in future issues?

Can you help with a problem? Every other time I turn my 520FM on it bleeps as if someone is holding down a key. I have to turn it off for about 10 seconds before switching it on again, but that doesn't always clear it.

When I do get things in order the

screen has quite a few flickery lines all over it, making most games very hard to play. How can it be cured? – **Dave Aldiss, Worthing, West Sussex.**

● For your cheats and games' pokes look no further than Arcade Corner, which we aim to make into a regular monthly feature. Any readers who have cheats should send them in to Arcade Corner.

As for your ST, we suggest that you first check all the leads running from the back of your micro. If the problem still persists take it to a reputable service engineer for thorough circuit testing.

where I could be teaching myself to type. I'm sure there must be others in similar situations.

Is there a time limit to how long a computer can stay on? The average time my ST is switched on is 11 to 12 hours. I don't know how this compares to other people, but I would like to leave a message writing program running in the shop window at night to be switched off automatically at say 2am, thus adding another five hours to the usage.

As you can see, I get my money's worth out of what I use, in fact I don't have time to play games as much as I'd like, but am I doing any damage to my computer or monitor? I've got a 1040STFM with SC1224 colour monitor.

Lastly, congratulations for a great magazine. As a user of most types of software, I find I can't put Atari ST User down until I've read it all. – **M. Johnston, Torquay, Devon.**

● Mr Watson's letter immediately below may answer your question about typing tutors. Our office STs are left running for about 12 hours a day and haven't developed any faults as a result.

There shouldn't be a problem leaving yours on for the extra hours at night providing it is not covered up or placed near a fire or radiator where it can overheat.

...and found

I RECEIVED my April ST User a few days ago and immediately turned to the Letters page. I was interested to read the two letters asking about typing tutors as I had received just such a program in the same post. It is faSType by Thimblesoft of Thimble Hall, Scorton, near Preston, Lancashire, and costs £12.99. It is on a single sided disc and works in colour low resolu-

tion. All instructions with the exception of loading procedures are on screen.

I have not yet had time to assess the system, but at a price much lower than the usual run of ST software prices I thought it worth trying. Whether this information helps your two inquirers remains to be seen, but if nothing else, it will give them something to think about. – **John Watson, Chesterfield, Derbyshire.**

Lost chords turn up

FIRST of all, when are you going to start a section on music and Midi in your monthly pull-out section? I have been waiting in anticipation since The Complete Atari ST started.

Secondly, this letter was printed using Atari Gdos, which I managed to get working with the Microsoft Write word processor after two weeks of sweat and toil – not to mention pages of printer paper.

The manual isn't very clear on how to set up your system – I think it more or less assumes that you have got either two drives and an Atari dot matrix printer, or a hard disc and an Atari laser printer.

Could you possibly do a short article of some kind explaining what Gdos is and how to get it running properly, as it comes with the Atari 1040STFM Professional Pack. – **Steve Sharples, Bingley, West Yorkshire.**

● Your prayers have been answered. Turn to this month's pull-out pages of The Complete Atari ST and read the beginning of a new series on Midi and music on the ST.

We will certainly give serious consideration to including an article on the implementation of Gdos on the ST.

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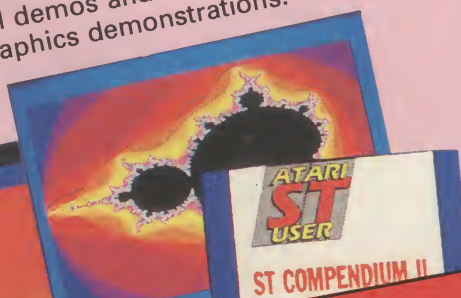
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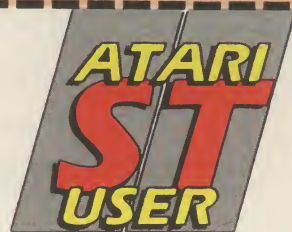
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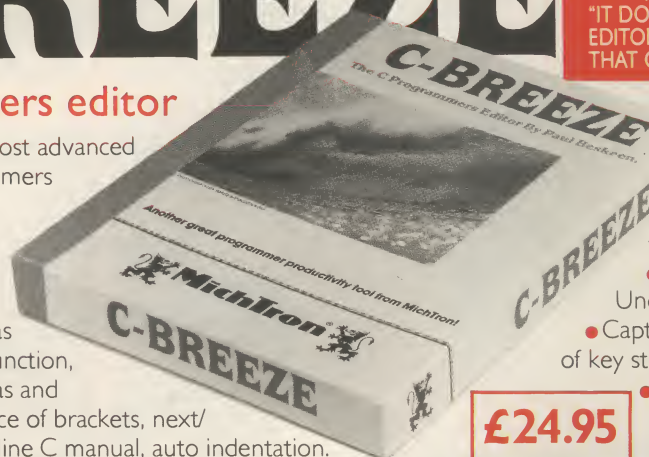
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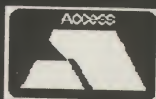
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520ST-FM SUPER PACK



**1Mb DISK DRIVE
£450 OF SOFTWARE**
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| Organiser | Triangle Publishing | £49.95 |
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JOYSTICK

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| Atari CX40 Joystick | Atari Corp | £4.99 |
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£399

INCLUDING VAT

With SM124 mono monitor: £498 INC VAT

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1040ST-FM PROFESSIONAL PACK

NOW WITH TV MODULATOR

For the serious home user and the small business, we are pleased to announce a new package based around the 1040ST-FM. The 1040ST-FM has 1Mbyte RAM and a 1Mbyte built-in disk drive. In addition, the 1040ST-FM now comes with a TV modulator built-in. (The previously available 1040ST-F was designed for use with a monitor only and did not come with a modulator.) This modulator allows the 1040ST-F to be plugged directly into any domestic TV set, and comes complete with a lead to allow you to do so. The new 'Professional Pack' from Silica includes the new 1040ST-FM with modulator plus four high quality software packages including a spreadsheet, database, word processor and programming language. This 'Professional Pack' software will enable you to get straight down to business with your new computer. In addition to this software (worth £384.84), if you buy the Professional Pack from Silica Shop, you will also receive the Silica ST Starter Kit (worth over £200), FREE OF CHARGE. Return the coupon for further information.



| | | |
|---------------------|------------------|---------|
| ATARI 1040ST-FM | (Computer) | £499.99 |
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£499

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The MEGA ST computers are styled as lightweight keyboard with a separate CPU, connected by a coiled telephone style cable. There are two versions of the MEGA ST, one with 2Mbytes of RAM and the other with 4Mbytes. Each version has a 1Mbyte double sided disk drive built-in to the CPU unit. The MEGA ST's do not come with modulator built-in and must therefore be used with a monitor. With every MEGA ST purchased, we will add the 'Professional Pack' software (worth £384.83) detailed above, plus the Silica ST Starter Kit (worth over £200) both FREE OF CHARGE. Return the coupon for further details.

2Mb MEGA ST

£899

+ mono monitor = £998

+ colour monitor = £1198

4Mb MEGA ST

£1199

+ mono monitor = £1298

+ colour monitor = £1498



DTP PageStream £149 +VAT =£171.35

Desktop Publishing (DTP) is one of the fastest growing applications for personal computers. We are pleased to announce a powerful low cost package for the Atari ST called PageStream. PageStream costs only £149 (+VAT=£171.35) and, because it works with an Atari 1040ST and a Seikosha SP-180AI printer, you can be up and running with a complete system for less than £1000. Some of the features of PageStream are listed to the right. If you would like further information on this program, complete and return the coupon below, ticking the 'DTP' box in the corner.

- * TEXT-FLOW AROUND GRAPHICS
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DO YOU OWN AN ATARI ST?

If you already own an Atari ST computer and would like to be registered on our mailing list as an ST user, let us know. We will be pleased to send you copies of our price lists and newsletters FREE OF CHARGE as they become available. Complete the coupon and return it to our Sidcup branch and begin experiencing a specialist ST service that is second to none.

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ST COMPUTERS

The range of Atari ST computers offers something for everyone. From the games enthusiast who wants the challenge of the very best in arcade action, to the businessman who wants to make financial forecasts or faultless presentations. The ST offers high quality graphics, sound and speed for the gamer, whilst providing a fast, user friendly and affordable solution to business. The ST is now firmly established in the home environment and boasts a wealth of users in education, local government, television, and a variety of different businesses. Software for the range stretches to cover applications as diverse as ENTERTAINMENT, ACCOUNTS, ART, COMMUNICATIONS, COMPUTER AIDED DESIGN, DATABASES, DESKTOP PUBLISHING, EDUCATION, MUSIC, PROGRAMMING, SPREADSHEETS, WORD PROCESSING and more. For a full list of the software available, as well as details of the ST range, complete and return the coupon below.

All prices correct at the time of going to press. E&OE

520ST-FM EXPLORER PACK WITH BUILT-IN 1Mb DISK DRIVE



The value for money offered by the Atari ST range is reflected in the Explorer Pack featuring the 520ST-FM computer with 512K RAM. The 520ST-FM computer now comes with a built-in 1 Mb double sided disk drive as well as a free mouse controller and a built-in TV modulator. The new 520ST-FM Explorer Pack includes the 520ST-FM computer, the arcade game Ranarama, a tutorial program and some useful desktop accessories. In addition, if you buy the Explorer Pack from Silica, we will give you the Silica ST Starter Kit worth over £200, FREE OF CHARGE. Return the coupon for details of our Starter Kit and of the full ST range.

£260

ONLY £2.51 PER WEEK
RETURN COUPON FOR DETAILS

+VAT= £299

+ SM124 mono monitor: £398 INC VAT

+ SC1224 colour monitor: £598 INC VAT

WHY SILICA SHOP?

Before you decide when to buy your new Atari ST computer, we suggest you consider very carefully WHERE you buy it. There are MANY companies who can offer you a computer, a few peripherals and the top ten selling titles. There are FEWER companies who can offer a wide range of products for your computer and expert advice and help when you need it. There is ONLY ONE company who can provide the largest range of Atari ST related products in the UK, a full time Atari ST specialist technical helpline and in-depth after sales support, including free newsletters and brochures delivered to your door for as long as you require after you purchase your computer. That one company is Silica Shop. We have been established in the home computer field for ten years with an annual turnover in excess of £8 million and can now claim to meet our customers requirements with an accuracy and understanding which is second to none. But don't just take our word for it. Complete and return the coupon below for our latest literature and begin to experience the Silica Shop specialist Atari service.

SILICA STARTER KIT: Worth over £200. FREE with every Atari ST computer bought from Silica.

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FREE SILICA STARTER KIT WORTH OVER £200

WITH EVERY ST - RETURN COUPON FOR DETAILS
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Do you already own a computer
If so, which one do you own?

DTP ☐



As the people of the Bloodwych awake to a new dawn, they find a stranger in their midst – from one of many races he has come. His task; to halt the demon that lies dormant within the Castle of the Bloodwych.

Unification of the Crystals of Sanguis will secure the Behemoth in his lair for all eternity. Should they remain separate, then he shall rise to bring darkness into the world.

This unique role-playing fantasy game allows greater interaction with the environment than has ever been seen before. Argue, barter, negotiate – even lie through your teeth! The fully implemented personalities of all the characters in Bloodwych allows a rich style of role-playing that has only been dreamt of.

With one or two player simultaneous mode, this is the game that you've been waiting for. Bloodwych for those that dare!

**ARGUE!
BARTER!
LIE THROUGH
YOUR TEETH!!!**



Atari ST Screen Shots



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| Amstrad CPC (disc) | £14.99 |
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Odwyck

**ARGUE!
BARTER!
LIE THROUGH
YOUR TEETH!!!**



Atari ST Screen Shots



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| Amiga | £24.99 |
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ATARI ST USER

LISTING

Display and convert
IMG pictures to Degas

REVIEWS

Jackpot 2, Jigspell,
Pools System, Virus
Destruction Utility,
Tweety Board, Mini
Office Spreadsheet

FEATURE

How to write and publish
a novel on the Atari ST

GAMES

Archipelago, Pac Land,
Mars Cops, The Deep,
Typhoon Thompson, Mad
Flunky, Circus Games,
Bio Challenge, Running
Man and many more

In this month's pullout:



Setting up a database
Using pointers in C
First steps in Midi
Gem window functions

The
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